Ariac utensili elettronici

Atlas Copco

Electric assembly tools and systems

Right the first time...

The Atlas Copco range of electric and battery assembly tools, control systems and associated software packages define the global benchmark in smart, cost-efficient and error-proof assembly management.

Browse the following pages and discover how our built-in error proofing functions can protect you from costly operator errors: no more forgotten, loose or over tightened screws. Now you can really know it's right – first time!

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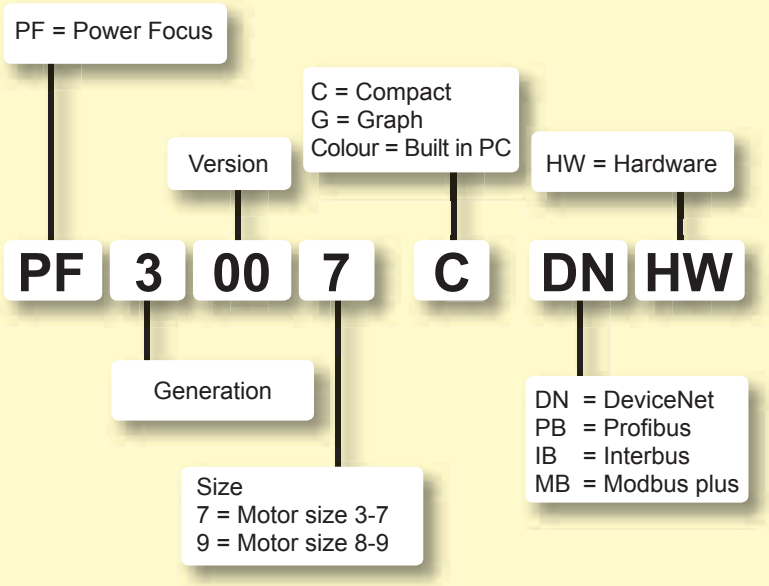
TOOL KEY

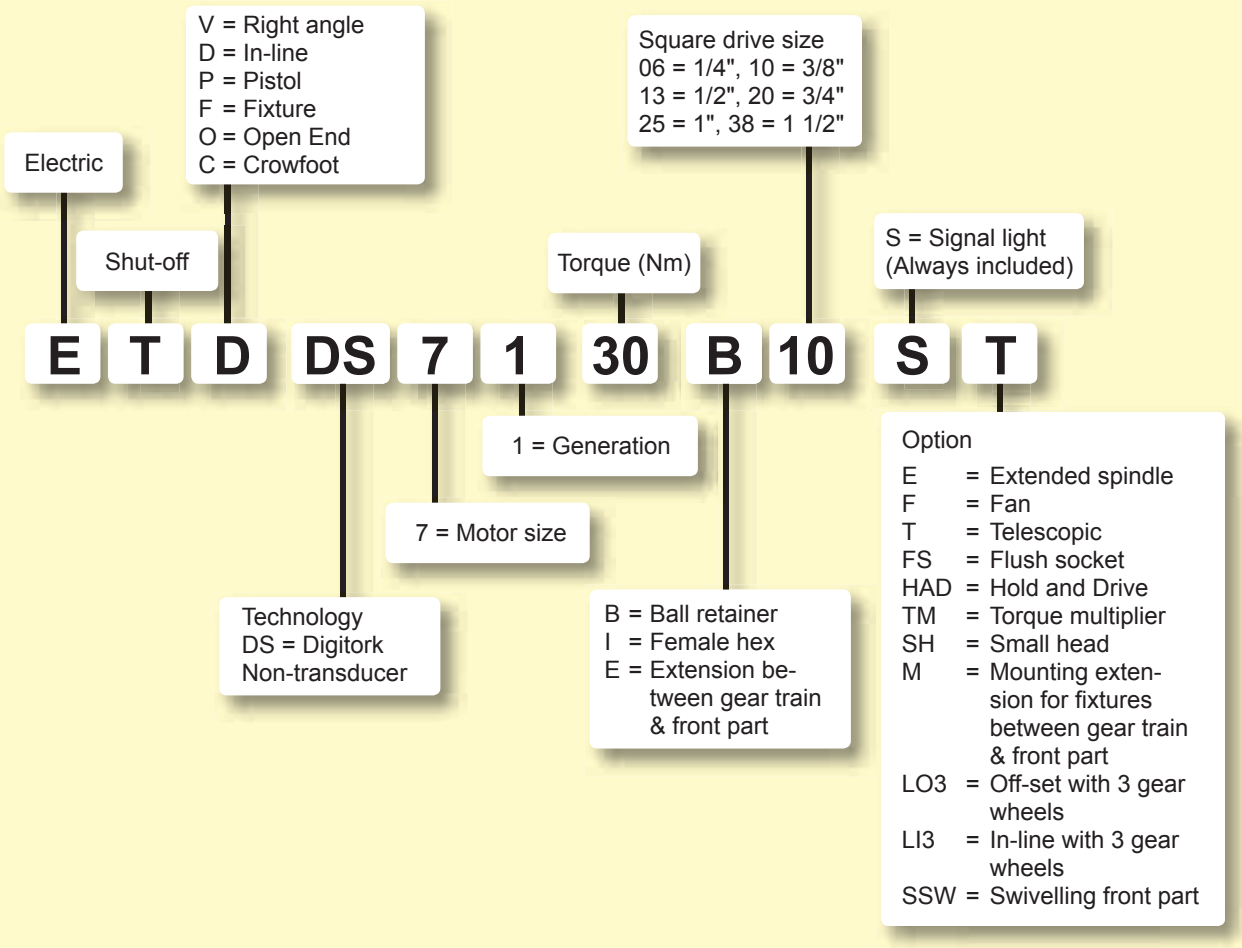
The designator/ordering numbers of Atlas Copco assembly tools is a combination of letters and numbers indicating various properties and characteristics of the tool concerned.

Below is a guide showing the general significance of each group of letters/numbers and specific guides to the individual tool types.

Power Focus

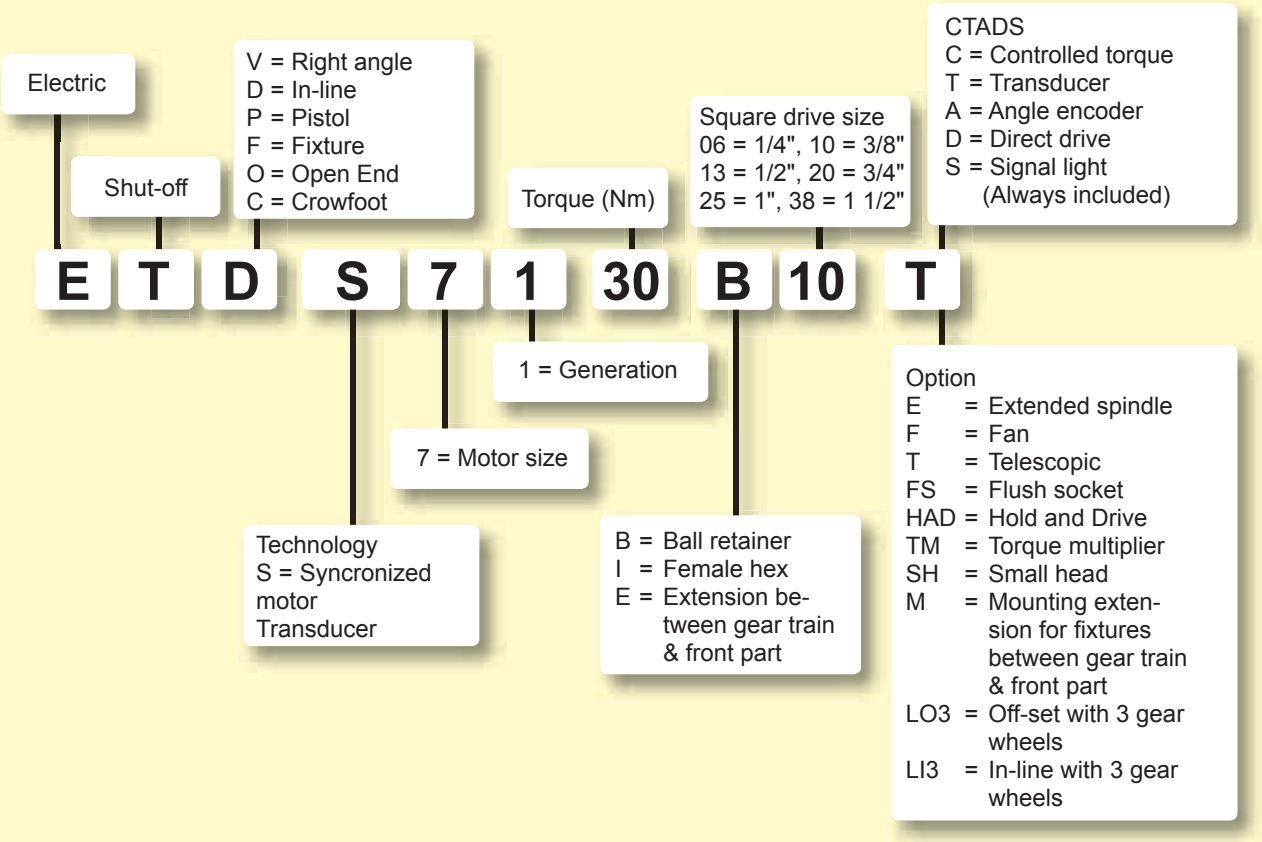


Tensor DS

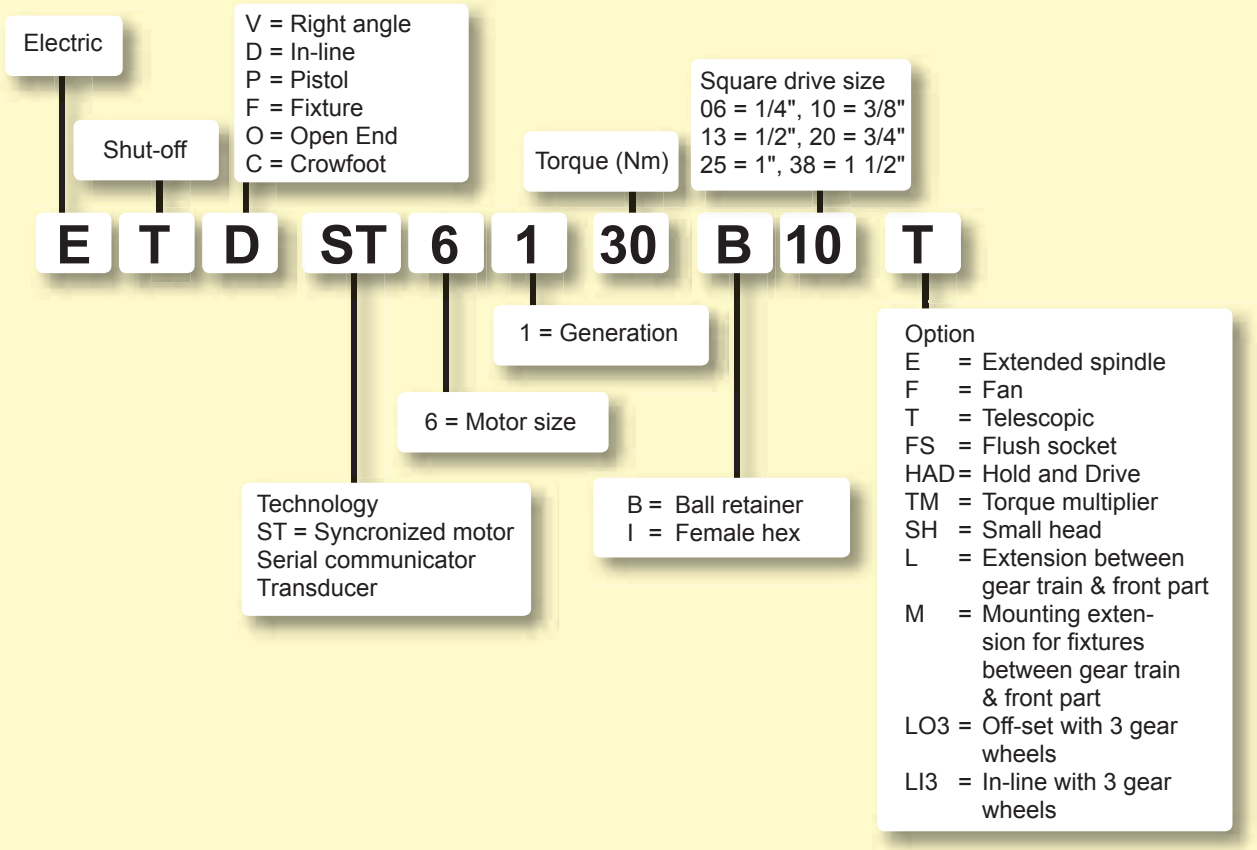


TOOL KEY

Tensor S


Electric
Shut-off
V = Right angle
D = In-line
P = Pistol
F = Fixture
O = Open End
C = Crowfoot
Torque (Nm)
Square drive size
06 = 1/4", 10 = 3/8"
13 = 1/2", 20 = 3/4"
25 = 1", 38 = 1 1/2"
CTADS
C = Controlled torque
T = Transducer
A = Angle encoder
D = Direct drive
S = Signal light
(Always included)
E T D S 7 1 30 B 10 T
1 = Generation
7 = Motor size
Technology
S = Syncronized motor
Transducer
B = Ball retainer
I = Female hex
E = Extension between gear train & front part
Option
E = Extended spindle
F = Fan
T = Telescopic
FS = Flush socket
HAD = Hold and Drive
TM = Torque multiplier
SH = Small head
M = Mounting extension for fixtures between gear train & front part
LO3 = Off-set with 3 gear wheels
LI3 = In-line with 3 gear wheels

Tensor ST


Electric
Shut-off
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Torque (Nm)
Square drive size
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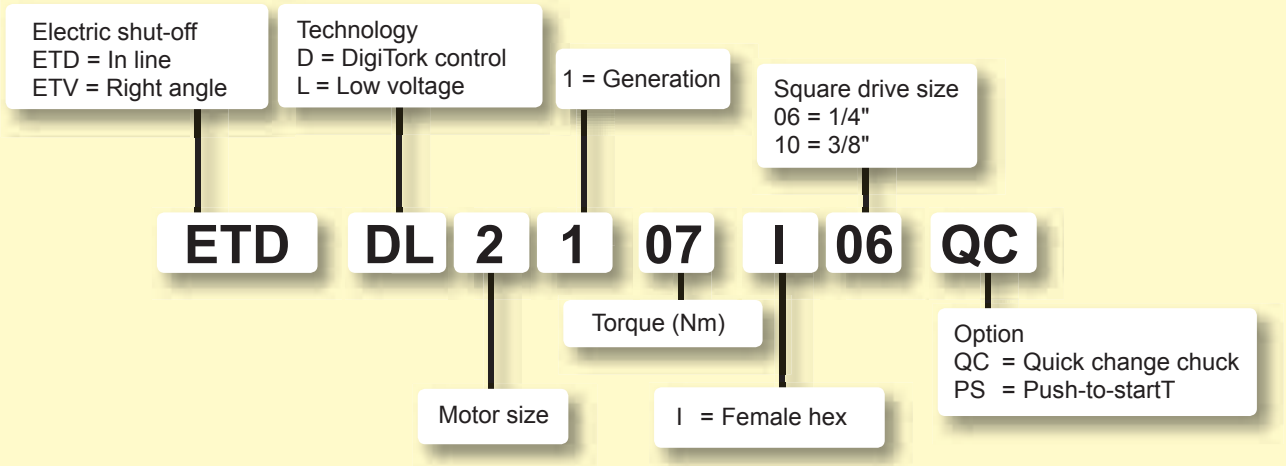
E T D ST 6 1 30 B 10 T
1 = Generation
6 = Motor size
Technology
ST = Syncronized motor
Serial communicator
Transducer
B = Ball retainer
I = Female hex
Option
E = Extended spindle
F = Fan
T = Telescopic
FS = Flush socket
HAD = Hold and Drive
TM = Torque multiplier
SH = Small head
L = Extension between gear train & front part
M = Mounting extension for fixtures between gear train & front part
LO3 = Off-set with 3 gear wheels
LI3 = In-line with 3 gear wheels

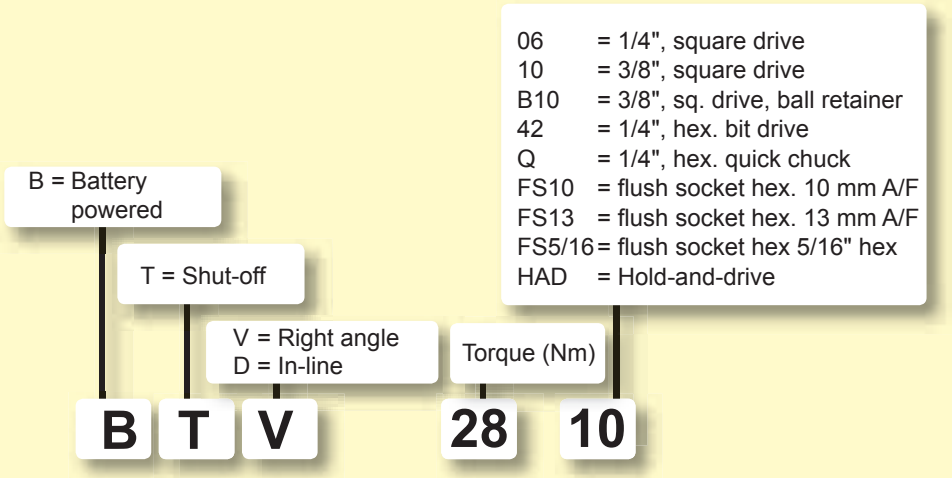
TOOL KEY

Screwdrivers

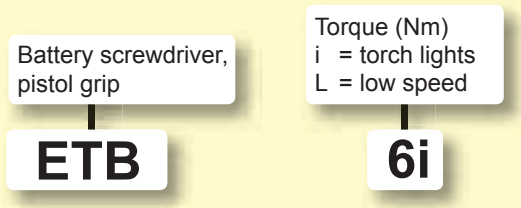
Tensor DL



BTV


06 = 1/4", square drive
10 = 3/8", square drive
B10 = 3/8", sq. drive, ball retainer
42 = 1/4", hex. bit drive
Q = 1/4", hex. quick chuck
FS10 = flush socket hex. 10 mm A/F
FS13 = flush socket hex. 13 mm A/F
FS5/16 = flush socket hex 5/16" hex
HAD = Hold-and-drive
B = Battery powered
T = Shut-off
V = Right angle
D = In-line
Torque (Nm)
B
T
V
28
10

ETB



BATTERY AND ELECTRIC SCREWDRIVERS

Low voltage electric screwdrivers and nutrunners

Atlas Copco offers a complete range of electric powered assembly tools including battery screwdrivers and nutrunners, small transformer powered screwdrivers and advanced current controlled screwdrivers, nutrunners and assembly systems.

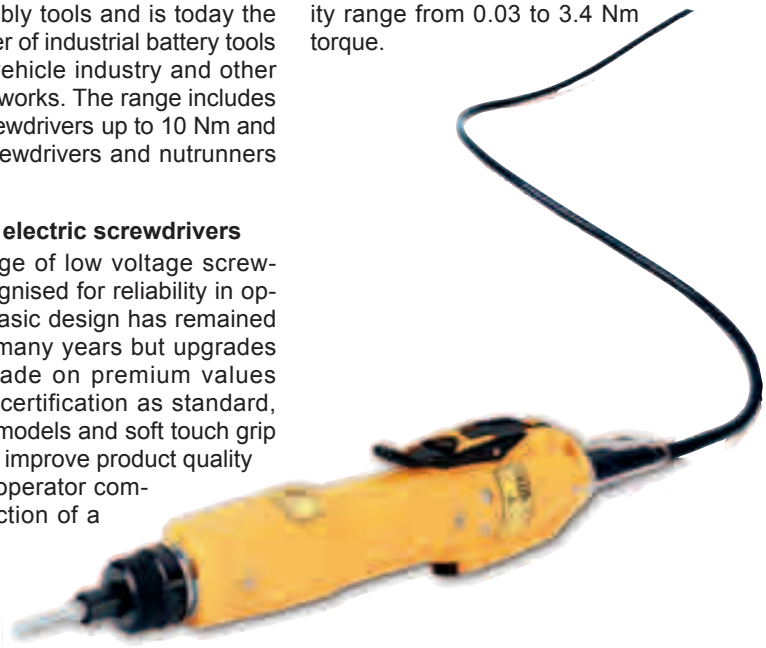
Low voltage electric motors have their obvious place as power source for battery screwdrivers and nutrunners. Low voltage electric screwdrivers – powered from the mains via a transformer and rectifier – are many times also preferred for small screws tightening in industrial applications where a clean and low-noise environment is a primary demand. Atlas Copco's wide experience in design of industrial assembly tools, from the high performance air screwdrivers and nutrunners with mechanical shut-off clutch to the sophisticated current controlled electric assembly tools, also forms a natural platform for the development of industrial battery tools and low voltage screwdrivers.

Battery screwdrivers and nutrunners

Freedom to move without being hampered by an air hose or a electric cable and the safety risk of jammed high voltage cords have led to a boost in demand for battery tools from craftsmen and lately also from the production industry. Atlas Copco has put the industrial touch to the battery assembly tools and is today the leading supplier of industrial battery tools to the motor vehicle industry and other assembly line works. The range includes ETB pistol screwdrivers up to 10 Nm and BTV angle screwdrivers and nutrunners up to 28 Nm.

Eliza shut-off electric screwdrivers

The Eliza range of low voltage screwdrivers is recognised for reliability in operation. The basic design has remained the same for many years but upgrades have been made on premium values such as ESD certification as standard, new soft stop models and soft touch grip – features that improve product quality and increase operator comfort. The selection of a low-voltage system is also a matter of maintaining highest level of safety against electric shock in operation and maintenance. The Eliza screwdrivers cover the capacity range from 0.03 to 3.4 Nm torque.



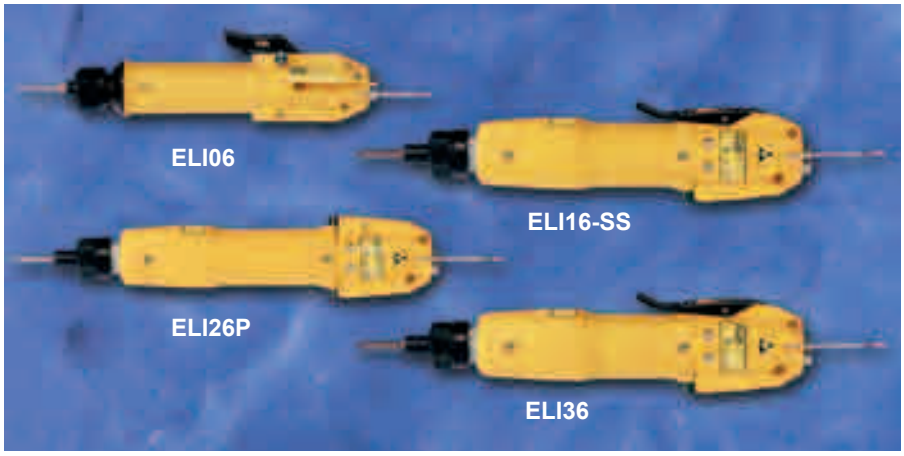
ELECTRIC SCREWDRIVERS

Screw size **M1 – M4**

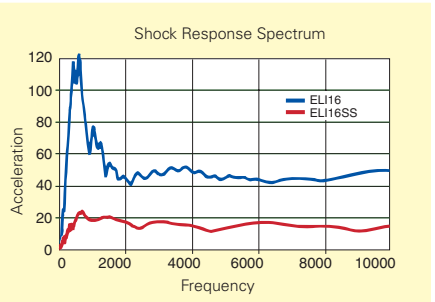
Torque range **0.03 – 3.4 Nm**

The Eliza electric screwdrivers are the ideal choice in the electronic industry, among small components manufacturers, the appliance industry and other industries where cleanliness in operation, ease of installation, low noise level and limited total investment are essential.

- **Safe** – Via a transformer the tools are powered by a mere 30 VDC, which means that there is no risk for dangerous electric chock in operation or during service and maintenance.
- **Ergonomic** – Soft touch grip, low weight, small dimensions, perfect balance, a minimum of vibration and reaction force.
- **Accurate** – Combined mechanical clutch and electric shut-off provides for excellent torque repeatability.
- **High productivity** – Careful balance between speed and torque, electrically and mechanically dimensioned for continuous production, meet the highest demands for production rate and service life.
- **ESD certified** – Dissipative plastic casing and electric connection of the tool body to ground potential prevent static electricity from being built up in or on the face of the tool and discharge to sensitive electronic components.



- **Soft stop options** – Special models are available for those applications where shock sensitive electronic devices might be harmed by the vibrations from the clutch action. The smooth shut-off also reduces the jerk to the hand of the operator.



Model	Screw capacity	Torque range Soft joint Nm	Torque range Soft joint in lb	Free speed r/min	Weight kg	Weight lb	Length mm	Bit drive	Ordering No.
Trigger start screwdrivers (excl. control box)									
ELI006	M1.0-M2.0	0.03 - 0.2	0.3 -1.7	1000	0.35	0.8	183	Ø 4 mm	8431 0156 06
ELI06	M1.2-M2.5	0.05 - 0.5	0.4 -4.4	1000	0.38	0.8	197	1/4 hex	8431 0156 00
ELI16	M2-M3	0.15 - 1.6	1.3 - 14	825	0.6	1.4	235	1/4 hex	8431 0156 18
ELI26	M2.5-M4	0.3 - 2.5	2.6 - 22	700	0.7	1.5	255	1/4 hex	8431 0156 26
ELI36	M2.5-M4	0.4 - 3.4	3.5 - 30	700	0.6	1.4	235	1/4 hex	8431 0156 34
Push start screwdrivers (excl. control box)									
ELI16-P	M2-M3	0.15 - 1.6	1.3 - 14	825	0.6	1.4	235	1/4 hex	8431 0156 42
ELI26-P	M2.5-M4	0.3 - 2.5	2.6 - 22	700	0.7	1.5	255	1/4 hex	8431 0156 59
ELI36-P	M2.5-M4	0.5 - 1.8	4.3 - 16	1500	0.6	1.4	235	1/4 hex	8431 0156 63
Soft-stop screwdrivers with trigger start (excl. control box)									
ELI06-SS	M1.4-M2.5	0.1 - 0.44	0.9 -3.9	1000	0.4	0.9	197	1/4 hex	8431 0156 67
ELI16-SS	M2-M3	0.25 - 1.3	2.2 - 11	825	0.6	1.4	235	1/4 hex	8431 0156 75
ELI26-SS	M2.5-M3	0.5 - 1.7	4.4 - 15	700	0.7	1.5	255	1/4 hex	8431 0156 83
Control boxes ESD certified									
CBE50	Controller for single ELI006, 06, 16 or 26 models								8431 0164 09
CBE65	Controller for single ELI36 models								8431 0164 17
CBE50-S	Slow start controller for single ELI006, 06, 16 or 26 models								8431 0164 25
Transformers									
PFS60-ESD	For single ELI006, 06, 16 or 26 models - 230/22 V. ESD certified								8431 0160 11
PFS60-ESD-115	For single ELI006, 06, 16 or 26 models - 115/22 V. ESD certified								8431 0160 13
PFS151	For ELI36 models and power network - 230/22 V. **Not ESD certified**[ab]								8431 0160 15
PFS151-115	For ELI36 models and power network - 115/22 V. **Not ESD certified**[ab]								8431 0161 15
HT150	"High Tension" transformer – 230/24 V. **Not ESD certified**[abc]								8431 0161 24
Power packages ESD certified									
CTB50	Transformer/controller for single ELI006, 06, 16 or 26 models								8431 0162 01
CTB65	Transformer/controller for single ELI36 models								8431 0162 19
CTB100	Transformer/controller for two ELI006, 06, 16 or 26 models								8431 0162 27

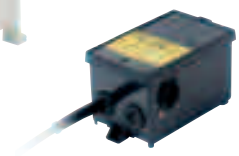
[a] In EPA (Electrostatic Protected Area) use power package CTB65 for ELI36 or distantly placed HT150.
[b] PFS151 has double socket connection.
[c] Use HT150 to compensate for voltage drop due to long distance between transformer and controller.

ELECTRIC SCREWDRIVERS

Electronic control
Despite the advanced electronic control of the tools the Eliza screwdrivers are small and light. This has been achieved by locating the electronic components in a separate control box. A number of different controllers or combined controller/transformer offers a variety of installation options and functions. For a complete installation the CBE controllers and PFS transformers or the CTB "Power Packs" must be specified separately.

Transformer
In the basic set-up with controller and separate transformer, the transformer is used to lower the mains voltage to 22 VAC before being rectified in the control box. The PFS60 transformer powers sizes ELI006, 06, 16, and 26. The ELI36 must have the bigger PFS151 transformer. The PFS151 transformer can be used for simultaneously powering several Eliza screwdrivers depending on size.

PFS151

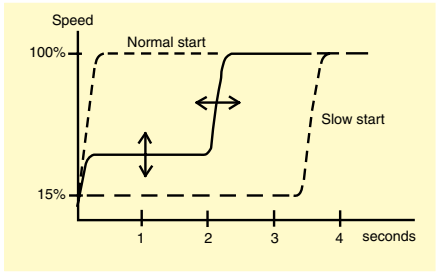


PFS60

Model	Powers simultaneously ELI006/06	ELI16/26	ELI36	Power VA
PFS60	2	1	-	60
PFS151	6	3	2	150

PFS60 – Single socket connection.
PFS151 – Double socket connection.

Slow start controller
High screwdriver speed is sometimes critical for both bit engagement and safe screw entering. With the optional controller, offering adjustable starting speed and time, the problems can be eliminated.



For ELI06, ELI16 and ELI26.

One unit installation
The combined transformer/controller units CTB simplify installation.

For ELI36 screwdrivers the CTB65 must be used as power supply where ESD approval is required.

The CTB Power Packs offer selection of low-speed mode for those applications where a high run-down speed might distort the thread, e.g. tightening self-drilling screws in plastic.

The CTB100 has connectors for simultaneously powering two screwdrivers of sizes ELI006, 06, 16, and 26.

ACCESSORIES

Screw pick-up system

Picking and positioning of screws are many times crucial for productivity in small screw assembly. The Eliza range of optional equipment offers a vacuum pick-up system to simplify pre-tightening preparations. The system consists of a vacuum pump, adapters for the screwdriver a shaker tray and grids for different screw dimensions.

The system components are not ESD certified.

Vacuum pick-up adapters

All Eliza screwdrivers can be equipped with vacuum pick-up adapters ready to connect to a vacuum pump. The adapters are delivered without nozzles.

Model	Ordering No.
Vacuum pump	4220 0062 00
Vacuum pick-up adapter for ELI06[a]	4220 0052 00
Vacuum pick-up adapter for ELI16/26/36[a]	4220 0053 00
Nozzle blank Ø 8 mm for ELI06	4220 0067 03
Nozzle blank Ø 8 mm for ELI16/26/36	4220 0070 03
Nozzle blank Ø 14 mm for ELI16/26/36	4220 0072 03

[a] Not ESD certified.

Nozzle blanks

The following brass blanks are available. They must be machined to fit the specific screw to be picked up.

Shaker tray

Consists of a rubber box. A variety of interchangeable rubber grid plates can be ordered separately.

Ordering No. 4220 0054 00

Grid

Screw size mm	Ordering No.	Screw size mm	Ordering No.
1.2/1.4	4220 0055 00	2.6	4220 0059 00
1.7	4220 0056 00	3.0	4220 0060 00
2.0	4220 0057 00	4.0	4220 0061 00
2.3	4220 0058 00		

Pistol grip

A pistol grip handle is available for models ELI16, 26 and 36.

(ESD certified)

Ordering No. 4220 0051 00

Push start ELI06

The push start function is also available for the ELI06 size by mounting a sliding grip sleeve replacing the standard trigger start.

(Not ESD certified)

Ordering No. 4220 0106 00

CONNECTORS ISO standard

To build your own 22 V AC network. With these components and an ordinary two core cable, min 1.5 mm², you can quickly arrange the electric supply for a series of screwdrivers.

Designation	Ordering No.
Male plug	4220 0095 00
2-way female socket For wall mounting (Not ESD certified)	4220 0096 00

Angle head

Eliza screwdriver models ELI16, 26 and 36 can be equipped with a 90° angle head for access in cramped quarters.

Ordering No. 4220 0425 80

Cable options

The tools are supplied with a cable for connection to the controller/power supply unit. Connecting one or two extension cables of 3 m length to the standard cable increases the distance between tool and control box up to 8 m.

(ESD certified)

Ordering No. 4220 0138 01

A spiral cable of 1.3 m length, extracted max 2.4 m, can also be ordered separately.

(Not ESD certified)

Ordering No. 4220 0347 00

SELECTED SERVICE KITS

Model	Small parts kit	Brush kit
ELI06	4220 0030 90	4220 0022 90
ELI16/26/36	4220 0049 90	4220 0041 90
ELI16P/26P	4220 0049 90	4220 0041 90

ESD APPROVED SCREWDRIVERS

Air-powered and low-voltage electric screwdrivers

ESD – Electrostatic discharge – is increasingly recognised as a major cause of damage to electronic devices.

ISO 9000 quality certification drives the need for proper ESD control programs and IEC international standard defines the risk potential and protection for the handling of electronic components.

Industrial tools – source of damage by ESD

Industrial screwdrivers used in the assembly of electronic components and devices incorporating microelectronics are naturally critical items with regard to ESD risk potential.

The body of the tool, whether air or electrically powered, can hold static electricity and discharge to the work piece via the screwdriver bit.

The plastic materials used for insulation of electrical tools and for convenience and thermal isolation on air tools are sources for generating and holding of static charges and also prevent the tool body from being brought to ground potential through the hand of the operator.

The plastic material used in electric cords and connectors as well as the plastic air hoses are also liable to build up electrostatic fields that might discharge to any object that comes close enough.

ESD certified screwdrivers

Atlas Copco offers ESD certified tools in the standard range of screwdriver models most frequently used in the electronic industries. This means a guarantee against damage of electronic components by an uncontrolled electrostatic discharge (ESD) from the tools.

Conformity to the requirements of IEC 61340-5-1 standard proposal is approved by SP, Swedish National Testing and Research Institute. In practice it certifies that the material of the equipment at no point will hold an electrostatic potential above 100 V for more than 2 seconds.

The Atlas Copco ESD protection concept has today been brought into all air-powered and electric screwdrivers in the capacity range up to 12.5 Nm.

Air tools installation for ESD protection

The air-powered screwdrivers must be set up in a way that the tool body will discharge to ground in order to meet the ESD approval standard. The simplest way to do this is to install the tools at the work place with the special Atlas Copco conductive air hose that grants that no electrostatic charges are built up at any face of the screwdriver or the bit used.

You will find the ESD approved screwdrivers for airpowered tools on pages 30-33 and pages 71-73 for electric tools.

INDUSTRIAL BATTERY ASSEMBLY TOOLS

Shut-off control

Screw size **M3 – M8**
Torque range **0.9 – 28 Nm**

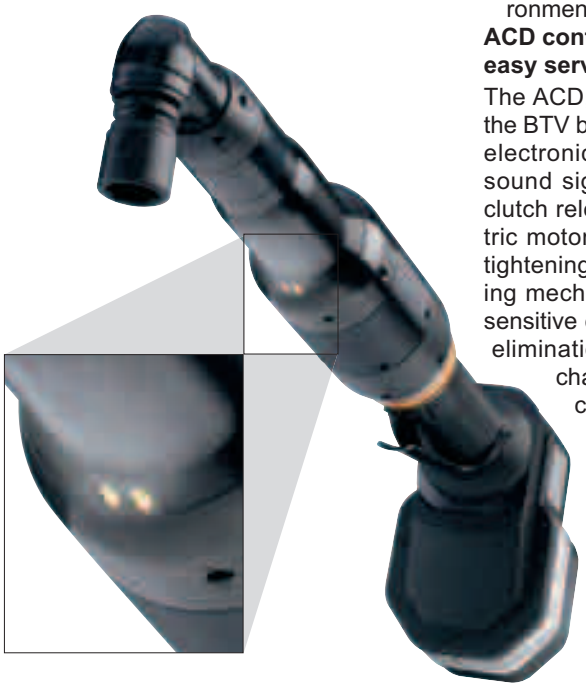
For productivity reasons air tools have generally been preferred in industrial applications due to the favourable power-to-weight ratio of the air motor. On industrial assembly lines today, however, the mode of operation has changed and many screws are best tightened with a battery tool that allows freedom to move along a running production line.

To meet the demands from industrial operation Atlas Copco has developed its own range of industrial battery tools, utilising know-how from building accurate and reliable industrial screwdrivers and combining this with new innovative technique in battery motor control.

BTV – battery angle nutrunners

The BTV battery angle nutrunner utilises the best of available techniques to allow a lightweight and handy battery tool, an extensive number of tightenings before recharging the battery, a service life that matches any other power tool and accuracy with electronic precision. Where portability is essential on your assembly line the BTV is the ideal match offering:

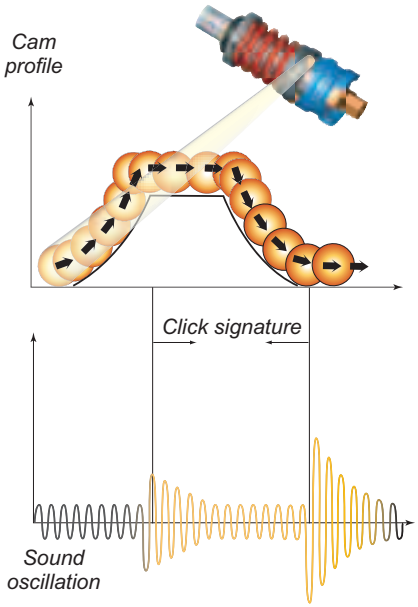
- **Torque accuracy** – Excellent torque repeatability, low mean shift and low reaction force.
- **Movability** – Freedom to move without air hose or electric cord to provide for the power. Freedom to work inside closed compartments, e.g. inside a vehicle.
- **Work protection** – Car body finish free from scratches from hoses and cords.
- **Work place arrangement** – High flexibility and rapid set-up.
- **A safe work place** – Free from interference of air hoses and risk of jammed electric cords.
- **Ergonomics** – Low sound level, clean for the operator and his working environment.



The BTV tools are equipped with a built in LED lamp for illuminating the screw head and simplify positioning.

ACD control – reliability, low wear and easy service

The ACD, Acoustic Clutch Detection, in the BTV battery tool uses a sophisticated electronic identification of the specific sound signature of the click when the clutch releases to short-circuit the electric motor and brake the rotation when tightening is finished. The lack of wearing mechanical switches, magnets and sensitive electronic components and the elimination of wiring between the mechanical clutch and the electronic control card means a considerable improvement in reliability, wearing properties and serviceability.



INDUSTRIAL BATTERY SCREWDRIVERS

Shut-off control

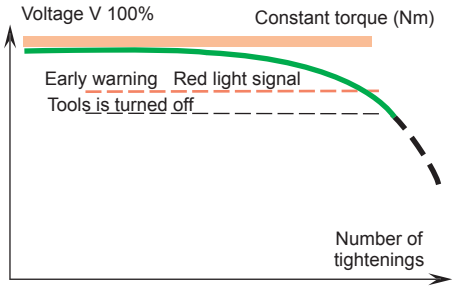
ETBi cordless pistol screwdrivers

The well-proven pistol screwdrivers ETBi use components of same high quality as in our pneumatic tools and electronic motor control adapted to industrial requirements. Common features are:

- **Certified accuracy** – Fast shut-off ensures tightening to the most demanding accuracy requirements.
- **High durability** – Industrial quality means reliability in operation and long service life.
- **Operator comfort** – Ergonomics and operation feedback with light signals contribute to outstanding performance.
- **Low mean-shift** – Clutch design ensures same torque on hard and soft joints throughout the full torque range.
- **Theft protection option** – Models offering electronic theft protection lock the tool on battery charging unless reactivated by a coder.

Green light = proper tightening!
A green light and the "click" sound tells the operator that the clutch has released and the tightening is OK.

Red light = time to recharge!
A flashing red light gives an early warning when it is time for recharging. All tools have protection to prevent start when there is not enough battery charge. This means that there is no risk for drop in applied torque due to low battery.



Protection against tightening torque drop due to low battery voltage.

Innovative lights

Torch light now standard – The ETB tools are now also equipped with a built-in LED lamp for illuminating the screw head and simplify positioning when working in confined spaces. The led lamps are placed in an optimal way to avoid disturbing shadows.

INDUSTRIAL BATTERY SCREWDRIVERS

Shut-off control

The ErgoPulse concept

EPA – battery pulse screwdrivers

The Atlas Copco range of battery tools also includes the ErgoPulse screwdriver utilising the pulse concept; yet another combination of industrial tool techniques.

- **High speed** – Gear-less operation means high rundown speed and short cycle times.
- **High torque, low reaction** – The pulse technique allows high torque without any reaction force to the operator.
- **Shut-off function** – A timer shut-off device eliminates operator influence on the tightening torque.
- **Theft protection option** – Also the EPA is available in a model with electronic theft protection.

EPA6

Model	Screw size mm	Recommended torque range Nm	Recommended torque range in lb	Free speed 9.6 V r/min	Free speed 12 V r/min	Free speed 14.4 r/min	Weight excl. batttery kg	Weight excl. batttery lb	Tool only Ordering No.	PROT version tool only Ordering No.
BTV/BTD – shut-off										
BTV7i-6	M3-M5	2 - 7	18 - 62	350	450	–	1.4	3.0	8431 0261 40	8431 0261 52
BTV7i-42	M3-M5	2 - 7	18 - 62	350	450	–	1.4	3.0	8431 0261 44	8431 0261 53
BTV7i-Q	M3-M5	2 - 7	18 - 62	350	450	–	1.4	3.0	8431 0261 49	8431 0261 54
BTV11i-6	M4-M6	4 - 11	36 - 97	300	380	–	1.4	3.0	8431 0261 55	8431 0261 59
BTV11i-42	M4-M6	4 - 11	36 - 97	300	380	–	1.4	3.0	8431 0261 56	8431 0261 60
BTV11i-Q	M4-M6	4 - 11	36 - 97	300	380	–	1.4	3.0	8431 0261 57	8431 0261 61
BTV11i-10	M4-M6	4 - 11	36 - 97	300	380	–	1.4	3.0	8431 0261 58	8431 0261 64
BTV15i-6	M6	8 - 15	70 - 132	–	340	410	1.7	3.7	8431 0261 65	8431 0261 69
BTV15i-42	M6	8 - 15	70 - 132	–	340	410	1.7	3.7	8431 0261 72	8431 0261 76
BTV15i-Q	M6	8 - 15	70 - 132	–	340	410	1.7	3.7	8431 0261 73	8431 0261 77
BTV15i-10	M6	8 - 15	70 - 132	–	340	410	1.7	3.7	8431 0261 68	8431 0261 78
BTV28i-42	M8	15 - 28	132 - 248	–	210	260	1.8	4.0	8431 0261 79	8431 0262 10
BTV28i-10	M8	15 - 28	132 - 248	–	210	260	1.8	4.0	8431 0261 80	8431 0262 11
BTV28i-B10	M8	15 - 28	132 - 248	–	210	260	1.8	4.0	8431 0261 83	8431 0262 12
BTV28i-Q	M8	15 - 28	132 - 248	–	210	260	1.8	4.0	8431 0261 86	8431 0262 14
BTV28i-FS10	M8	15 - 28	132 - 248	–	210	260	1.8	4.0	8431 0261 89	–
BTV28i-FS13	M8	15 - 28	132 - 248	–	210	260	1.8	4.0	8431 0261 92	–
BTV28i-FS15/16	M8	15 - 28	132 - 248	–	210	260	1.8	4.0	8431 0261 95	–
BTV28i-HAD	M8	15 - 28	132 - 248	–	210	260	1.8	4.0	8431 0261 98	–
BTD16-10	M8	10 - 16	88 - 142	–	330	400	1.7	3.7	8431 0262 09	–
ETB – screwdrivers with shut-off. Pistol grip models										
ETB4i	M3-M5	0.9 - 4.5	8 - 40	800	970	–	1.2	2.6	8431 0272 46	8431 0272 47
ETB6i	M3-M5	1.9 - 7	16 - 62	520	620	–	1.2	2.6	8431 0272 41	8431 0272 44
ETB6Li	M3-M5	1.9 - 7	16 - 62	290	360	–	1.2	2.6	8431 0272 48	–
ETB10i	M4-M6	3 - 10	26 - 90	360	480	–	1.2	2.6	8431 0272 42	8431 0272 43
(ETB6/10: For low torque 1-3.5 Nm use optional clutch spring 4210 3690 90. **NOTE**: The torque marking system is adapted to standard spring)										
ErgoPulse – hydraulic impulse screwdrivers										
EPA6	M6	5 - 13	44 - 115	3000	–	–	1.2	3.7	8431 0262 48	8431 0262 49

All pistol grip models have 1/4" female hexagon drive for bits with quick change chuck.

ACCESSORIES

Modular battery system

Battery standard – Basic battery standard is 9.6 V for the screwdriver sizes ETB and BTV7 and 11. The tools can also be powered with a 12 V battery to increase speed by approximately 25%. The angle nutrunner models BTV15 and BTV28 are designed for 14.4 V battery.

Charger standard – Chargers are of pulse types that ensures long battery life. Standard charger included in tool kits is of quick charge type.

Multiple charger system – By assembly of standard chargers on a common bracket a multiple charger system can be built up. A mounting bracket for up to five chargers or four chargers and a theft decoder is available to order.

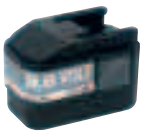
The mounting bracket can fit up to five chargers or four chargers and a decoder.

	Voltage	Capacity	Weight gram	Ordering No.
Battery	9.6 V	2.0 Ah	570	4210 3680 02
	12 V Flat pack	1.4 Ah	500	4210 3680 03
	12 V	2.0 Ah	730	4210 3680 05
	14.4 V	2.0 Ah	800	4210 3680 06

12 V Flat pack/ 1.4 Ah

12 V / 2.0 Ah

14.4 V / 2.0 Ah



9.6 V / 2.0 Ah

Batteries

Pulse chargers			
15/23 min[a]	(1.4/2.0 Ah)	230/240 V	4210 3675 00
25/36 min	(1.4/2.0 Ah)	110/120 V	4210 3675 01
1/1.3 hour	(1.4/2.0 Ah)	230/240 V	4210 3676 00
Mounting bracket for multiple charger			
Euro-contact		230/240 V	4210 3677 00
US-contact		110/120 V	4210 3677 01
NOTE: Chargers are bought separately.			
Decoder kit			
Decoder kit		230/240 V	4210 3679 90
Decoder kit		110/120 V	4210 3679 91
Protective cover ETB			4210 3810 00
Suspension yoke			
ETB			4211 5000 80
BTV (swivelling)			4211 5080 80

[a] Not for 14.4 V battery.

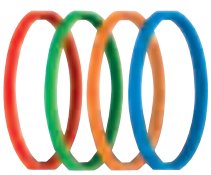
Pulse charger

Decoder

Angle head for ETB (gear ratio 1:1.56) **NOTE**: Torque will increase 50% when angle head is used.	
1/4" female hexagon drive for bits	4210 1875 88
3/8" square drive for sockets	4210 1875 89
1/4" square drive for sockets max 7 Nm	4110 1404 76
30° angle head for ETB (up to 7 Nm)	
Quick change chuck for female bits	4110 1436 84
Square drive kit 1/4" for EPA6	4210 2518 90

Colour torque system

The Atlas Copco colour torque system gives you an easily visible torque marking system for all your ETB tools. Select a unique colour combination for each torque level used on your assembly line.



Colour torque marking rings

Red	4210 3795 02
Green	4210 3795 04
Blue	4210 3795 06
Orange	4210 3795 08

Protective cover

TENSOR

The new generation electrically controlled nutrunners

Tensor – there is a tool for every application

The Tensor electrical tool range covers all assembly line requirements for safety- and quality-critical fasteners. All industries with assembly operations have one thing in common – demanding customers who insist on quality and value for money. The Tensor range has been developed to give you the benefits of controlled tightening and advanced electric systems.

- **Productivity gains** – The Tensor means faster spindle speeds, lower cycle times and higher cycle rates.
- **Green light for quality** – No more forgotten screws and faulty fasteners. The green light from the Tensor will make sure that you don't jeopardize you assembly quality.
- **Exceptional ergonomics** – The balance, grip and low weight makes them a favorite on the assembly line.
- **Cut costs with Tensor** – Less maintenance, lower operating costs and reduction of down time, makes the Tensor the lowest life cycle cost tool in the industry.

With available torques ranging from 1 to 4000 Nm, the Tensor range of multi-torque electrical tools can be used to equip an entire facility.

Four tool ranges cover all application demands:

Tensor DL: quality-critical

The Tensor DL range is used for quality-critical screws. Optimized for small screw assembly, the DL is the electrical choice in the low torque segment.

Tensor DS: quality-critical

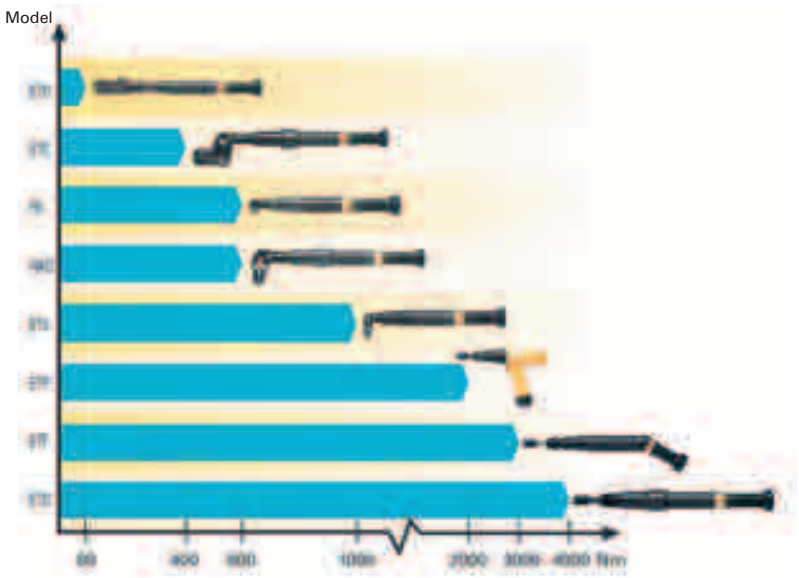
Tensor DS is used for quality-critical fasteners not requiring a traceable measured torque value. DS offers major productivity and quality gains compared with conventional tooling.

Tensor S: safety-critical/traceable feedback

The Tensor S is designed for safety-critical applications where there is a requirement for traceable torque value, which can be recorded to confirm that the fastener was fastened to the specific torque.

Tensor ST: top of the line

Also used for safety-critical applications demanding a traceable torque value, the Tensor ST range complements the S range, ensuring extremely high level of productivity, ergonomic benefits and error proofing functionality.



TENSOR DL
Electric screwdrivers

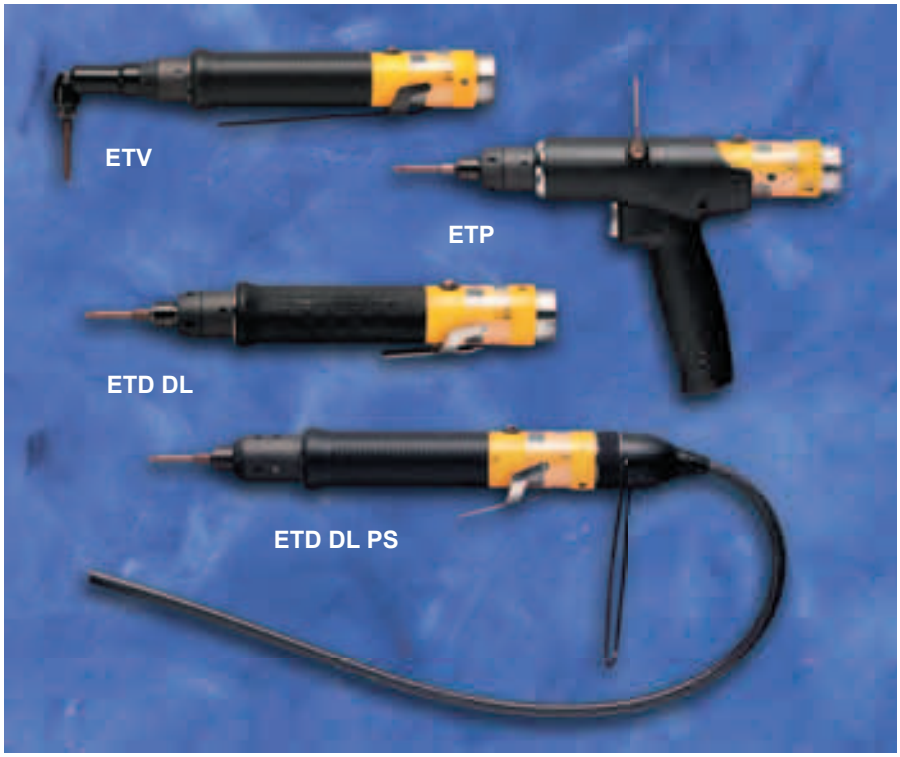
Tensor DL screwdrivers exist in three different tool configurations:

ETD – Straight screwdrivers with configurable function button. Available as lever and push to start.

ETV – Right angle screwdrivers with lever start and configurable function button.

ETP – Pistol grip handle screwdriver with configurable function button. Available as lever and push to start.

- The DL screwdriver range has been optimized for small screw assembly:
- Torque range up to 12 Nm.
- All tools have ESD certification.
- Ergonomic design promotes operator safety.
- Brushless motor gives long service intervals and low maintenance costs.
- Signal lights ensure detection of incorrectly tightened fasteners.



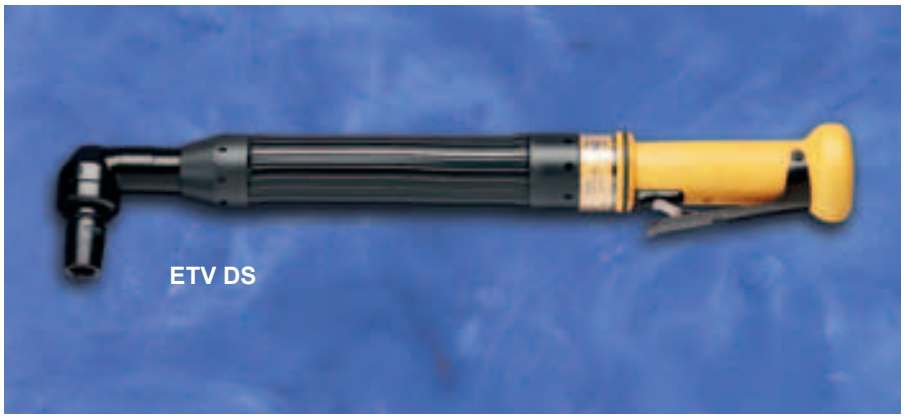
Model	Torque Nm	Torque in lbs	Speed r/min	Weight kg	Weight lb	Length mm	CS distance mm	Ordering No.
Straight tools (lever start)								
ETD DL21-04-I06	1 - 4	8.8 - 35.4	1600	0.6	1.3	235	18 / 19.5	8433 4014 25
ETD DL21-07-I06	2.2 - 7.5	19.5 - 66	970	0.6	1.3	235	18 / 19.5	8433 4017 31
ETD DL21-10-I06	3 - 10	26.6 - 88.5	720	0.6	1.3	235	18 / 19.5	8433 4019 10
Straight tools (push-to-start and front lights)								
ETD DL21-01-I06-PS	0.3 - 1.2	2.6 - 10	2200	0.6	1.3	243	18 / 19.5	8433 4010 89
ETD DL21-04-I06-PS	1 - 4	8.8 - 35.4	1600	0.6	1.3	243	18 / 19.5	8433 4014 91
ETD DL21-07-I06-PS	2.2 - 7.5	19.5 - 66	970	0.6	1.3	243	18 / 19.5	8433 4017 69
ETD DL21-10-I06-PS	3 - 10	26.6 - 88.5	720	0.6	1.3	243	18 / 19.5	8433 4019 25
Right angle tools (lever start)								
ETV DL21-04-I06	1 - 4	8.8 - 35.4	1600	0.7	1.5	268	9	8433 4004 47
ETV DL21-04-I06-QC	1 - 4	8.8 - 35.4	1600	0.7	1.5	268	9	8433 4004 73
ETV DL21-04-06	1 - 4	8.8 - 35.4	1600	0.7	1.5	268	9	8433 4004 91
ETV DL21-07-I06	2.2 - 7.5	19.5 - 66	970	0.7	1.5	268	9	8433 4007 66
ETV DL21-07-I06-QC	2.2 - 7.5	19.5 - 66	970	0.7	1.5	268	9	8433 4007 79
ETV DL21-07-06	2.2 - 7.5	19.5 - 66	970	0.7	1.5	268	9	8433 4007 94
ETV DL21-10-I06	3 - 12	26.6 - 106.4	610	0.7	1.5	282	11	8433 4009 34
ETV DL21-10-I06-QC	3 - 12	26.6 - 106.4	610	0.7	1.5	282	11	8433 4009 61
ETV DL21-10-06	3 - 12	26.6 - 106.4	610	0.7	1.5	282	11	8433 4009 77
Pistol grip (lever start)								
ETP DL21-04-I06	1 - 4	8.8 - 35.4	1600	0.6	1.3	235	18 / 19.5	8433 4024 19
ETP DL21-07-I06	2.2 - 7.5	19.5 - 66	970	0.6	1.3	235	18 / 19.5	8433 4027 26
ETP DL21-10-I06	3 - 10	26.6 - 88.5	720	0.6	1.3	235	18 / 19.5	8433 4029 13
Pistol grip (push-to-start and front lights)								
ETP DL21-01-I06-PS-H	0.3 - 1.2	2.6 - 10	2200	0.6	1.3	243	18 / 19.5	8433 4020 77
ETP DL21-04-I06-PS-H	1 - 4	8.8 - 35.4	1600	0.6	1.3	243	18 / 19.5	8433 4024 66
ETP DL21-07-I06-PS-H	2.2 - 7.5	19.5 - 66	970	0.6	1.3	243	18 / 19.5	8433 4027 53
ETP DL21-10-I06-PS-H	3 - 10	26.6 - 88.5	720	0.6	1.3	243	18 / 19.5	8433 4029 28

TENSOR DS

Angle electric nutrunners

ETV DS

- ETV DS right angle tools are ideal for hand-held operations.
- Torque range from 2 to 600 Nm (higher torque models available on request).
- Complete range of Flush Socket and Hold & Drive Tools.
- Ball retainers for fast and easy socket changes.



Model	Square drive in	Torque Nm	Torque ft lb	Speed r/min	Weight kg	Weight lb	Length mm	CS distance mm	Ordering No.
ETV DS4									
DS4-05-10S	3/8	1.8 - 6	1.4 - 4.4	1135	1.3	2.9	381	13.5	8433 0705 31
DS4-10-10S	3/8	4.5 - 15	3.5 - 11	585	1.3	2.9	381	13.5	8433 0706 14
DS4-20-10S	3/8	6 - 20	4.4 - 14.5	400	1.3	2.9	381	13.5	8433 0706 49
ETV DS4 Ball Retainer									
DS4-10-B10S	3/8	4.5 - 15	3.5 - 11	585	1.3	2.9	381	13.5	8433 0706 31
ETV DS7									
DS7-15-10S	3/8	5 - 17	3.6 - 12.4	1160	1.4	3.1	412	13.5	8433 0720 10
DS7-30-10S	3/8	10 - 35	7.3 - 25	800	1.4	3.1	412	13.5	8433 0721 42
DS7-40-10S	3/8	12 - 40	9 - 29	800	1.6	3.6	434	18	8433 0721 94
DS7-50-10S	3/8	17 - 55	12 - 40	480	1.6	3.6	434	18	8433 0722 58
DS7-70-13S	1/2	24 - 80	18 - 58	345	2.1	4.7	461	20	8433 0723 16
DS7-100-13S	1/2	33 - 110	24 - 80	240	2.3	5.1	482	20	8433 0723 70
DS7-160-13S	1/2	45 - 150	33 - 110	150	2.8	6.3	525	25.5	8433 0723 98
DS7-200-13S	1/2	60 - 200	44 - 146	120	2.8	6.3	525	25.5	8433 0724 15
ETV DS7 Ball Retainer									
DS7-30-B10S	3/8	10 - 35	7.3 - 25	800	1.4	3.1	412	13.5	8433 0721 54
DS7-40-B10S	3/8	12 - 40	9 - 29	800	1.6	3.6	434	18	8433 0721 99
DS7-50-B10S	3/8	17 - 55	12 - 40	480	1.6	3.6	434	18	8433 0722 63
DS7-100-B13S	1/2	33 - 110	24 - 80	240	2.3	5.1	482	20	8433 0723 68
ETV DS7 Flush Socket									
DS7-25-S-FS10	-	5 - 25	4 - 18	800	1.4	3.1	412	13.5	8433 0720 55
DS7-30-S-FS13	-	10 - 35	7.3 - 25	800	1.4	3.1	412	13.5	8433 0721 65
DS7-40-S-FS13	-	12 - 40	9 - 29	800	1.6	3.6	434	18	8433 0722 03
DS7-50-S-FS13	-	17 - 55	12 - 40	480	1.6	3.6	434	18	8433 0722 75
DS7-70-S-FS	-	24 - 80	18 - 58	345	2.1	4.7	436	20	8433 0723 26
DS7-100-S-FS	-	33 - 110	24 - 80	240	2.3	5.1	482	20	8433 0723 86
DS7-160-S-FS	-	45 - 150	33 - 110	150	2.8	6.3	525	26	8433 0724 00
DS7-200-FS	-	60 - 200	44 - 146	120	2.8	6.3	525	26	8433 0725 01
ETV DS7 Hold & Drive									
DS7-30-HAD-SH	-	10 - 35	7.3 - 25	800	2.0	4.4	435	18	8433 0721 59
DS7-40-HAD-SH	-	12 - 40	9 - 29	800	2.0	4.4	434	18	8433 0722 15
DS7-50-S-HAD	-	17 - 55	12 - 40	480	3.0	6.6	504	26	8433 0722 65
DS7-70-S-HAD	-	24 - 80	18 - 58	290	3.1	6.8	479	26	8433 0723 30
DS7-100-S-HAD	-	33 - 110	24 - 80	225	3.2	7.1	525	26	8433 0723 73
DS7-160-HAD	-	45 - 150	33 - 110	150	3.3	7.3	525	26	8433 0724 02
DS7-200-HAD	-	60 - 200	44 - 146	120	3.3	7.3	525	26	8433 0724 25
ETV DS9									
DS9-100-13S	1/2	40 - 100	29 - 73	685	3.3	7.4	534	20	8433 0750 21
DS9-180-13S	1/2	72 - 180	53 - 131	385	3.8	8.5	578	25.5	8433 0750 68
DS9-270-20S	3/4	108 - 270	79 - 197	235	7.0	15.6	661	33.5	8433 0751 38
DS9-370-20S	3/4	148 - 370	108 - 270	150	7.1	15.8	661	33.5	8433 0751 86
DS9-450-20S	3/4	180 - 450	131 - 328	145	11.6	25.8	702	54	8433 0752 04
DS9-600-25S	1	240 - 600	175 - 438	125	11.6	25.8	702	54	8433 0752 63
ETV DS9 Flush Socket									
DS9-180-FS	-	72 - 180	53 - 131	385	4.1	9.0	577	26	8433 0750 73
DS9-270-S-FS	-	108 - 270	79 - 197	235	7.0	15.6	661	34	8433 0751 46
DS9-370-S-FS	-	148 - 370	108 - 270	150	7.1	15.8	661	34	8433 0751 90
DS9-600-S-FS	-	240 - 600	175 - 438	125	11.6	25.8	701	53	8433 0752 70
ETV DS9 Hold & Drive									
DS9-100-S-HAD	-	40 - 100	29 - 73	575	4.2	10.3	577	26	8433 0750 25
DS9-180-S-HAD	-	72 - 180	53 - 131	385	4.7	10.3	577	26	8433 0750 70
DS9-270-S-HAD	-	108 - 270	79 - 197	235	9.1	20.0	661	34	8433 0751 44
DS9-370-S-HAD	-	148 - 370	108 - 270	150	9.2	20.2	661	34	8433 0751 95

TENSOR DS

Straight electric nutrunners

ETD DS

- ETD DS inline tools. The low torque series is ideal for hand-held bench assembly. The high torque tools are well suited for fixtured applications.
- Torque range from 1 to 4000 Nm (higher torque models available on request).
- Telescopic spindles for fixtured applications.
- Female hex drives for bits.
- Swivelling front parts for low reaction force.

Model	Square drive in	Torque Nm	Torque ft lb	Speed r/min	Weight kg	Weight lb	Length mm	CS distance mm	Spline/ Mounting	Ordering No.
ETD DS4										
DS4-05-10S	3/8	2 - 5	1.5 - 3.6	1315	1.1	2.5	380	28	– / 1	8433 0710 29
DS4-10-10S	3/8	4 - 14	3 - 10	620	1.1	2.5	380	28	– / 1	8433 0710 52
ETD DS4 Telescopic										
DS4-05-10ST	3/8	2 - 5	1.5 - 3.6	1315	1.3	2.9	418	28	2 / 2	8433 0710 37
DS4-10-10ST	3/8	4 - 14	1.5 - 3.6	620	1.3	2.9	418	28	2 / 2	8433 0710 73
ETD DS4 Female Hex										
DS4-02-I06S	1/4	1.0 - 2.5	0.7 - 1.8	2942	1.1	2.5	371	21.5	– / 1	8433 0710 22
DS4-05-I06S	1/4	2 - 5	1.5 - 3.6	1310	1.1	2.5	371	28	– / 1	8433 0710 26
ETD DS7										
DS7-20-10S	3/8	6 - 20	4.4 - 14.5	1240	1.4	3.1	411	28	– / 1	8433 0730 23
DS7-30-10S	3/8	10 - 35	7.3 - 25	745	1.4	3.1	411	28	– / 1	8433 0730 88
DS7-50-13S	1/2	17 - 55	12 - 40	540	1.9	4.2	456	28	2 / 2	8433 0731 12
DS7-70-13S	1/2	21 - 70	15 - 51	370	2.2	4.9	477	28	2 / 2	8433 0731 31
DS7-90-13S	1/2	28 - 95	21 - 69	275	2.2	4.9	477	28	2 / 2	8433 0731 45
DS7-120-13S	1/2	38 - 125	28 - 91	225	2.2	4.9	477	28	2 / 2	8433 0731 84
ETD DS7 Telescopic										
DS7-20-10ST	3/8	6 - 20	4.4 - 14.5	1240	1.5	3.3	449	28	2 / 2	8433 0730 44
DS7-30-10ST	3/8	10 - 35	7.3 - 25	745	1.5	3.3	449	28	2 / 2	8433 0731 05
DS7-50-13ST	1/2	17 - 55	12 - 40	540	2.1	4.7	483	28	3 / 5	8433 0731 24
DS7-70-13ST	1/2	21 - 70	15 - 51	370	2.4	5.4	504	28	3 / 5	8433 0731 40
DS7-90-13ST	1/2	28 - 95	21 - 69	275	2.4	5.4	504	28	3 / 5	8433 0731 52
DS7-120-13ST	1/2	38 - 125	28 - 91	225	2.4	5.4	504	28	3 / 5	8433 0731 96
ETD DS9										
DS9-100-13S	1/2	40 - 100	29 - 73	715	3.0	6.7	529	32	2 / 2	8433 0756 42
DS9-150-13S	1/2	60 - 150	44 - 110	455	3.2	7.1	544	32	2 / 2	8433 0757 54
DS9-200-13S	1/2	80 - 200	58 - 146	340	3.2	7.1	544	32	2 / 2	8433 0758 71
DS9-450-20S	3/4	180 - 450	131 - 328	125	7.4	16.3	639	40.5	6 / 8	8433 0760 71
ETD DS9 Telescopic										
DS9-100-13ST	1/2	40 - 100	29 - 73	715	3.2	7.1	557	32	3 / 5	8433 0756 92
DS9-150-13ST	1/2	60 - 150	44 - 110	455	3.4	7.6	572	32	3 / 5	8433 0758 03
DS9-200-13ST	1/2	80 - 200	58 - 146	340	3.4	7.6	572	32	3 / 5	8433 0759 11
DS9-270-20ST	3/4	108 - 270	79 - 197	225	6.0	13.4	653	36	6 / 8	8433 0760 55
DS9-450-20ST	3/4	180 - 450	131 - 328	125	7.6	17	689	40.5	6 / 8	8433 0760 88
DS9-600-20ST	3/4	240 - 600	175 - 438	110	7.6	17	689	40.5	6 / 8	8433 0761 35
DS9-1000-25ST	1	400 - 1000	292 - 730	68	12.5	28	824	47	7 / 11	8433 0763 63
DS9-2000-38ST	1 1/2	600 - 2000	438 - 1460	34	22.5	50.4	824	68	8 / 12	8433 0764 20
DS9-4000-38ST	1 1/2	1000 - 4000	730 - 2920	17	21.9	48.2	903	68	8 / 12	8433 0764 40
ETD DS9 Swivelling										
DS9-450-20SSW	3/4	180 - 450	79 - 197	125	7.8	17.4	639	40.5	6 / 8	8433 0760 94
DS9-600-20SSW	3/4	240 - 600	175 - 438	110	7.8	17.4	639	40.5	6 / 8	8433 0761 59

TENSOR DS

Pistol grip electric nutrunners

ETP DS

- ETP DS pistol grip tool for both hand-held and fixtured applications.
- Torque range from 2 to 2000 Nm (higher torque models available on request).
- Telescopic spindles for fixtured applications.
- Swivelling front parts for low reaction force.
- Female hex drives for bits.
- Swivelling tools are equipped with non-reversible start button, for operator safety.

Model	Square drive in	Torque Nm	Torque ft lb	Speed r/min	Weight kg	Weight lb	Length mm	CS distance mm	Spline/ Mounting	Ordering No.
ETP DS4										
DS4-05-06S	1/4	2 - 5	1.5 - 3.6	1310	1.1	2.5	193	21.5	– / –	8433 0708 76
DS4-10-06S	1/4	3.5 - 12	2.5 - 8.8	660	1.1	2.5	193	21.5	– / –	8433 0708 92
DS4-10-10S	3/8	3.5 - 12	2.5 - 8.8	660	1.1	2.5	193	21.5	– / –	8433 0709 06
ETP DS4 Female Hex										
DS4-02-I06S	1/4	1.0 - 2.5	0.7 - 1.8	2942	1.1	2.5	201	21.5	– / –	8433 0708 57
DS42-02-I06	1/4	1.0 - 2.5	0.7 - 1.8	2950	0.9	2.0	188	21.3	– / –	8433 0708 40
DS4-05-I06S	1/4	2 - 5	1.5 - 3.6	1310	1.1	2.5	201	21.5	– / –	8433 0708 61
DS42-05-I06	1/4	2 - 5	1.5 - 3.6	1770	0.9	2.0	188	21.3	– / –	8433 0708 69
DS4-07-I06S	1/4	2.1 - 7	1.5 - 5.1	905	1.1	2.5	201	21.5	– / –	8433 0708 80
DS4-10-I06S	1/4	3.5 - 12	2.5 - 8.8	660	1.1	2.5	201	21.5	– / –	8433 0708 83
DS42-10-I06	1/4	3.5 - 12	2.5 - 8.8	905	1.0	2.2	188	21.3	– / –	8433 0708 87
ETP DS7										
DS7-20-10S	3/8	6 - 20	4.4 - 14.5	1240	1.6	3.6	273	22	– / 1	8433 0726 36
DS7-30-10S	3/8	10 - 35	7.3 - 25	750	1.6	3.6	273	22	– / 1	8433 0726 53
DS7-50-13S	1/2	17 - 55	12 - 40	540	1.9	4.2	318	21.5	2 / 2	8433 0726 87
DS7-70-13S	1/2	21 - 70	15 - 51	370	2.1	4.7	340	21.5	2 / 2	8433 0727 01
DS7-90-13S	1/2	28 - 95	21 - 69	275	2.1	4.7	340	21.5	2 / 2	8433 0727 19
DS7-120-13S	1/2	38 - 125	28 - 91	220	2.1	4.7	340	21.5	2 / 2	8433 0727 47
ETP DS7 Telescopic										
DS7-70-13ST	1/2	21 - 70	15 - 51	370	2.2	4.9	367	22.5	3 / 5	8433 0727 05
ETP DS7 Swivelling										
DS7-70-13SSW	1/2	21 - 70	15 - 51	370	2.2	4.9	339	29.5	2 / 4	8433 0727 09
DS7-90-13SSW	1/2	28 - 95	21 - 69	275	2.2	4.9	339	29.5	2 / 4	8433 0727 28
DS7-120-13SSW	1/2	38 - 125	28 - 91	220	2.2	4.9	339	29.5	2 / 4	8433 0727 84
ETP DS9										
DS9-100-13S	1/2	40 - 100	29 - 73	790	3.8	8.5	378	32	2 / 2	8433 0765 39
DS9-150-13S	1/2	60 - 150	44 - 110	510	3.8	8.5	392	32	2 / 2	8433 0765 58
DS9-200-13S	1/2	80 - 200	58 - 146	375	3.8	8.5	392	32	2 / 2	8433 0766 05
DS9-270-20S	3/4	108 - 270	79 - 197	250	5.8	12.9	451	36	6 / 8	8433 0766 49
DS9-450-20S	3/4	180 - 450	131 - 328	140	7.4	16.5	487	40.5	6 / 8	8433 0767 52
DS9-600-20S	3/4	240 - 600	175 - 438	120	7.4	16.5	487	40.5	6 / 8	8433 0768 08
DS9-1000-25S	1	400 - 1000	292 - 730	76	12.0	27.0	615	47	7 / 11	8433 0768 66
DS9-2000-38S	1 1/2	800 - 2000	584 - 1460	40	22.0	48.9	630	68	8 / 12	8433 0769 10
ETP DS9 Telescopic										
DS9-2000-38ST	1 1/2	800 - 2000	584 - 1460	34	22.0	48.9	676	68	8 / 12	8433 0769 20
ETP DS9 Swivelling[a]										
DS9-100-13SSW	1/2	40 - 100	29 - 73	790	3.9	8.7	394	32	2 / 4	8433 0765 41
DS9-150-13SSW	1/2	60 - 150	44 - 110	510	3.9	8.7	394	32	2 / 4	8433 0765 69
DS9-200-13SSW	1/2	80 - 200	58 - 146	375	3.9	8.7	394	32	2 / 4	8433 0766 12
DS9-270-20SSW	3/4	108 - 270	79 - 197	250	5.9	13.1	451	36	6 / 8	8433 0766 54
DS9-450-20SSW	3/4	180 - 450	31 - 328	140	7.5	16.7	487	40.5	6 / 8	8433 0767 61
DS9-600-20SSW	3/4	240 - 600	75 - 438	120	7.5	16.7	487	40.5	6 / 8	8433 0768 20

[a] Non-reversible

TENSOR DS
Fixtured electric nutrunners

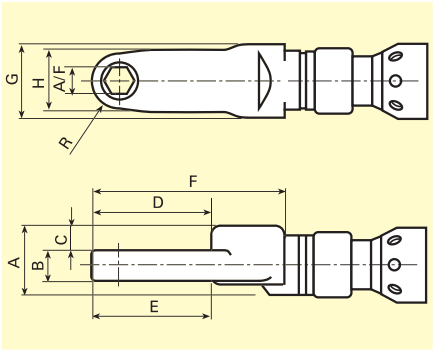
ETF DS

- ETF DS inline tools specially designed for built-in and fixtured applications.
- Torque range from 1 to 100 Nm (higher torque models available on request), with the possibility to make bigger tools.
- Extra high durability.
- Remote start button.
- Small centre to side distance.
- Easy cable routing.

Model	Square drive in	Torque Nm	Torque ft lb	Speed r/min	Weight kg	Weight lb	Length mm	CS distance mm	Spline	Ordering No.
ETF DS4 Telescopic										
DS4-05-10ST	3/8	2 - 5	1.5 - 3.6	1310	1.1	2.5	398	21.5	2	8433 0450 08
DS4-10-10ST	3/8	4 - 14	3 - 10	620	1.1	2.5	398	21.5	2	8433 0450 31
ETF DS7 Telescopic										
DS7-15-10ST	3/8	5 - 15	3.6 - 11	990	1.3	2.9	429	21.5	2	8433 0455 44
DS7-25-10ST	3/8	8 - 25	6 - 18	595	1.3	2.9	429	21.5	2	8433 0455 59
DS7-40-13ST	1/2	12 - 40	9 - 29	430	2.0	4.4	463	21.5	3	8433 0455 78
DS7-50-13ST	1/2	15 - 50	11 - 36	290	2.3	5.1	484	21.5	3	8433 0456 05
DS7-70-13ST	1/2	21 - 70	15 - 50	220	2.3	5.1	484	21.5	3	8433 0456 42
DS7-100-13ST	1/2	30 -100	22 - 73	175	2.3	5.1	484	21.5	3	8433 0456 82
ETF DS9 Telescopic										
DS9-100-13ST	1/2	30 -100	22 - 73	340	3.0	7.0	551	32	3	8433 0460 92

TENSOR DS
Crowfoot electric nutrunnners

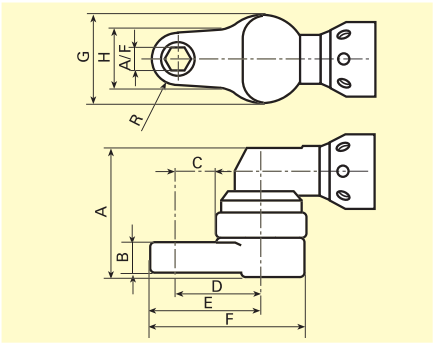
In-Line crowfoot tools
DIMENSIONS



Model	Torque Nm	Torque ft lb	Speed r/min	Weight kg	Weight lb	Length mm	A/F mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	R mm	Ordering No.
ETC DS7																	
DS7-25-13-LI3	6 - 28	4.4 - 20.7	622	1.9	4.2	507	13	34	15	13	59	71	94	35	30	13	8433 0710 90

For sockets, see separate ordering material (9833 1381 01)

Offset crowfoot tools
DIMENSIONS

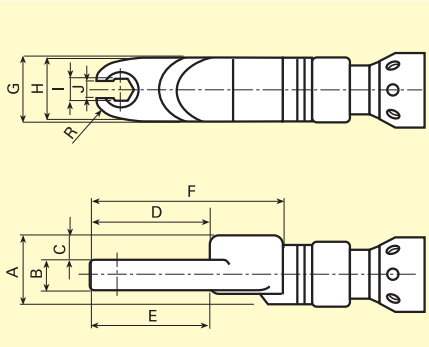


Model	Torque Nm	Torque ft lb	Speed r/min	Weight kg	Weight lb	Length mm	A/F mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	R mm	Ordering No.
ETC DS4																	
DS4-05-7-LO3	1 - 5	0.7 - 3.7	844	1.5	3.3	400	7	56	9	6	25	32	47	37	15	7.5	8433 0701 04
DS4-08-8-LO3	2 - 9.5	1.5 - 7	582	1.5	3.3	402	8	60	14	8	26	34	49	37	16	8	8433 0701 08
ETC DS7																	
DS7-15-10-LO5	3.5 - 18	2.6 - 13.3	1164	1.7	3.7	474	10	60	15	48	66	76	91	37	22	10	8433 0701 12
DS7-20-13-LO3	4.6 - 23	3.4 - 17	796	1.7	3.7	460	13	58	10	25	47	62	82	44	31	14.5	8433 0701 16
DS7-25-13-LO3	5.6 - 28	4.2 - 20.7	796	1.8	4.0	454	13	62	15	20	42	55	76	44	30	13	8433 0701 23
DS7-25-13-LO5	5.6 - 28	4.2 - 20.7	796	2.0	4.4	514	13	68	15	62	84	97	118	44	30	13	8433 0701 29
DS7-40-13-LO3	8.8 - 44	6.5 - 32.5	478	2.2	4.8	478	13	68	18	25	47	62	82	44	31	14.5	8433 0701 34
DS7-40-13-LO5	8.8 - 44	6.5 - 32.5	478	2.2	4.8	425	13	69	18	72	94	108	129	44	31	14.5	8433 0701 38
DS7-60-17-LO3	13 - 65	9.6 - 48.1	346	2.7	5.9	507	17	77	24	29	51	66	89	48	30	15	8433 0701 46
DS7-60-17-LO5	13 - 65	9.6 - 48.1	346	3.3	7.3	558	17	81	24	78	102	117	140	48	30	15	8433 0701 56
DS7-80-21-LO3	18 - 90	13.3 - 66.6	236	3.3	7.3	585	21	90	20	35	66	86	112	63	40	20	8433 0701 60
DS7-80-21-LO5	18 - 90	13.3 - 66.6	236	4.1	9.0	651	21	92	20	101	132	152	178	63	40	20	8433 0701 65
ETC DS7 Extra heavy duty																	
DS7-40-13-AO3	8 - 40	6 - 29	480	2.3	5.0	486	13	60.3	19	33	53	69	86	40	17	16	8433 0702 15
DS7-70-17-AO3	14 - 70	11 - 51	345	2.9	6.4	528	17	66.5	19	45	68	87	107	45	21	19.5	8433 0702 32
DS7-120-17-AO3	24 - 120	18 - 88	120	4.1	9.0	587	17	88	25	42	68	88	113	51	25	19.8	8433 0702 55
ETC DS9																	
DS9-140-21-LO3	30 - 150	22.2 - 111	287	4.8	10.6	638	21	101	33	35	66	86	112	63	40	20	8433 0701 75
DS9-200-21-LO3	43 - 215	31.8 - 159.1	174	10.0	22.0	718	21	146	40	33	70	91	125	77	42	21	8433 0701 80

For sockets, see separate ordering material (9833 1381 01)

TENSOR DS
Tube nut electric nutrunners

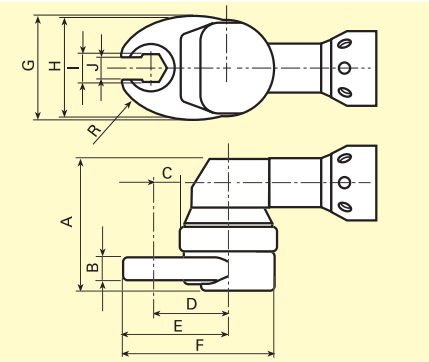
In-Line tube nut tools
DIMENSIONS



Model	Torque Nm	Torque ft lb	Speed r/min	Weight kg	Weight lb	Length mm	I mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	R mm	Ordering No.
ETO DS4																		
DS4-10-10-LI3	2.5 - 12	1.9 - 8.9	468	1.5	3.4	449	10	32	10	13	37	26	67	34	31	7	11.5	8433 0703 05
ETO DS7																		
DS7-15-10-LI3	3 - 15	2.2 - 11.1	1046	1.7	3.7	483	10	32	12	11	39	26	68	34	32	8	14	8433 0703 10
DS7-18-13-LI3	3.6 - 18	2.7 - 13.3	743	1.7	3.7	499	13	34	11	15	49	32	84	35	38	8.5	16	8433 0703 15
DS7-30-13-LI3	6.6 - 33	4.7 - 24.3	453	2.4	5.2	525	13	43	18	14	47	31	83	38	40	10.4	25	8433 0703 21
DS7-35-13-LI3	7 - 35	5.2 - 25.9	438	2.6	5.7	569	13	46	11	21	70	48	113	45	55	12.5	32	8433 0703 25
DS7-50-17-LI3	11 - 55	8.2 - 40.7	290	3.0	6.6	628	17	46	12	20	81	39	124	45	59	16	32	8433 0703 35
DS7-80-19-LI3	16 - 80	11.9 - 59.2	226	3.5	7.7	629	19	46	18	17	74	52	137	64	59	17	32	8433 0703 40

For sockets, see separate ordering material (9833 1381 01)

Offset tube nut tools
DIMENSIONS



Model	Torque Nm	Torque ft lb	Speed r/min	Weight kg	Weight lb	Length mm	I mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	R mm	Ordering No.
ETO DS4																		
DS4-08-8-LO3	1.7 - 8.5	1.3 - 6.3	584	1.5	3.3	397	8	59	11	4	22	30	45	37	29	6	10	8433 0703 50
ETO DS7																		
DS7-10-10-LO3	2.4 - 12	1.8 - 8.9	1164	1.6	3.5	434	10	59	10	7	25	35	50	37	31	7	11.5	8433 0703 60
DS7-18-13-LO3	3.6 - 18	2.7 - 13.3	796	1.8	3.9	441	13	61	11	8	30	42	63	44	38	8	15	8433 0703 68
DS7-25-13-LO3	5.6 - 28	4.2 - 20.7	796	1.9	4.2	469	13	65	11	13	37	52	75	48	50	11	31	8433 0703 75
DS7-50-17-LO3	11 - 55	8.2 - 40.7	346	2.8	6.2	510	17	76	12	18	49	69	97	63	59	16	32	8433 0703 80
DS7-80-19-LO3	16 - 80	11.9 - 59.2	236	3.7	8.1	568	19	91	18	18	49	63	97	63	59	17	32	8433 0703 85
DS7-100-24-LO3	22 - 110	16.3 - 81.4	198	4.3	9.5	584	24	92	20	23	60	85	119	74	77	21	33	8433 0703 90

For sockets, see separate ordering material (9833 1381 01)

TENSOR S

Angle electric nutrunners

ETV S

- ETV S right angle tools are ideal for hand-held operations.
- Torque range from 1 to 600 Nm (higher torque models available on request).
- Complete range of Flush Socket and Hold & Drive tools.
- Ball retainers for fast and easy socket changes.
- Female hex drive and quick chucks for bits.

Model	Square drive in	Torque Nm	Torque ft lb	Speed r/min	Weight kg	Weight lb	Length mm	CS distance mm	Ordering No.
ETV S4									
S4-05-10CTADS	3/8	1 - 5	0.7 - 3.6	930	1.5	3.3	382	13.5	8433 0236 26
S4-10-10CTADS	3/8	3 - 15	2.2 - 11	650	1.5	3.3	382	13.5	8433 0236 51
S4-20-10CTADS	3/8	4 - 20	2.9 - 14.4	450	1.5	3.3	382	13.5	8433 0236 91
S4-30-10CTADS	3/8	6 - 30	4.4 - 22	270	1.6	3.5	382	13.5	8433 0237 04
ETV S4 Ball Retainer									
S4-10-B10CTADS	3/8	3 - 15	2.2 - 11	650	1.5	3.3	382	13.5	8433 0236 62
ETV S4 Flush Socket									
S4-10-FS10	-	3 - 15	2.2 - 11	650	1.4	3.2	382	13.5	8433 0236 69
ETV S4 Female Hex									
S4-10-I06CTADS	1/4	3 - 15	2.2 - 11	650	1.5	3.3	382	13.5	8433 0236 32
ETV S4 Quick Chuck									
S4-05-QI06	1/4	1 - 5	0.7 - 3.6	930	1.5	3.3	382	13.5	8433 0236 29
ETV S7									
S7-28-10CTADS	3/8	5 - 29	4 - 21	1300	1.6	3.5	413	13.5	8433 0245 20
S7-30-10CTADS	3/8	6 - 35	5 - 25	910	1.6	3.5	413	13.5	8433 0247 33
S7-40-10CTADS	3/8	8 - 40	6 - 29	910	1.7	3.7	435	18	8433 0250 00
S7-50-10CTADS	3/8	10 - 55	7 - 40	545	1.9	4.2	435	18	8433 0252 87
S7-70-13CTADS	1/2	14 - 80	10 - 58	390	2.2	4.8	461	20	8433 0273 09
S7-100-13CTADS	1/2	20 - 110	15 - 80	300	2.5	5.5	482	20	8433 0280 00
S7-150-13CTADS	1/2	30 - 150	22 - 110	185	2.9	6.4	525	25.5	8433 0288 67
S7-200-13CTADS	1/2	40 - 200	29 - 146	160	3.0	6.6	525	25.5	8433 0291 17
ETV S7 Ball Retainer									
S7-28-B10CTADS	3/8	5 - 29	4 - 21	1300	1.6	3.5	413	13.5	8433 0245 23
S7-30-B10CTADS	3/8	6 - 35	5 - 25	910	1.6	3.5	413	13.5	8433 0247 35
S7-40-B10CTADS	3/8	8 - 40	6 - 29	910	1.7	3.7	435	18	8433 0250 42
S7-50-B10CTADS	3/8	10 - 55	7 - 40	545	1.9	4,2	435	18	8433 0252 62
S7-70-B13CTADS	1/2	14 - 80	10 - 58	390	2.2	4.8	461	20	8433 0273 44
S7-100-B13CTADS	1/2	20 - 110	15 - 80	300	2.5	5.5	482	20	8433 0280 31
S7-150-B13CTADS	1/2	30 - 150	22 - 110	185	2.9	6.4	525	25.5	8433 0288 46
S7-200-B13CTADS	1/2	40 - 200	29 - 146	160	3.0	6.6	525	25.5	8433 0291 44
ETV S7 with Fan									
S7-28-10CTADS-F	3/8	5 - 29	4 - 21	1300	1.8	4.0	451	13.5	8433 0245 25
S7-30-10CTADS-F	3/8	5 - 35	5 - 25	910	1.8	4.0	451	13.5	8433 0247 92
S7-40-10CTADS-F	3/8	8 - 40	6 - 29	910	1.9	4.2	474	18	8433 0250 21
S7-50-10CTADS-F	3/8	10 - 55	7 - 40	545	2.1	4.6	474	18	8433 0253 15
S7-70-13CTADS-F	1/2	14 - 80	10 - 58	390	2.4	5.3	499	20	8433 0273 68

TENSOR S

Angle electric nutrunners

Model	Square drive in	Torque Nm	Torque ft lb	Speed r/min	Weight kg	Weight lb	Length mm	CS distance mm	Ordering No.
ETV S7 Flush Socket									
S7-25-CTADS-FS13	-	6 - 25	5 - 18	910	1.6	3.5	413	13.5	8433 0244 12
S7-28-FS5/16	-	5 - 29	4 - 21	1300	1.6	3.5	413	13.5	8433 0244 21
S7-30-CTADS-FS13	-	6 - 35	5 - 25	910	1.6	3.5	413	13.5	8433 0247 96
S7-40-CTADS-FS13	-	8 - 40	6 - 29	910	1.8	4.0	435	18	8433 0251 51
S7-50-CTADS-FS13	-	10 - 55	7 - 40	545	1.8	4.0	435	18	8433 0254 14
S7-70-CTADS-FS	-	14 - 80	10 - 58	390	2.6	5.7	461	20.3	8433 0275 15
S7-100-CTADS-FS	-	20 -110	15 - 80	300	3.0	6.7	482	20.3	8433 0282 49
S7-150-CTADS-FS	-	30 -150	22 -110	185	3.3	7.3	525	26	8433 0289 04
S7-200-CTADS-FS	-	40 -200	29 -146	160	3.3	7.3	525	26	8433 0291 79
ETV S7 Hold & Drive									
S7-28-HAD-SH	-	5 - 29	4 - 21	1300	2.1	4.7	436	18.3	8433 0245 74
S7-30-HAD-SH	-	6 - 35	5 - 25	910	2.1	4.7	436	18.3	8433 0247 90
S7-40-HAD-SH	-	8 - 40	6 - 29	910	2.1	4.7	436	18.3	8433 0251 64
S7-50-HAD-SH	-	10 - 55	7 - 40	545	2.1	4.7	436	18.3	8433 0253 74
S7-70-CTADS-HAD	-	14 - 80	10 - 58	320	3.3	7.3	504	26	8433 0274 15
S7-100-CTADS-HAD	-	20 -110	15 - 80	225	3.7	8.2	525	26	8433 0280 97
S7-150-CTADS-HAD	-	30 -150	22 -110	185	3.5	7.7	525	26	8433 0288 93
S7-200-CTADS-HAD	-	40 -200	29 -146	160	3.5	8.4	525	26	8433 0292 27
ETV S9									
S9-50-13CTADS	1/2	15 - 50	10.8 - 36	1160	4.2	9.2	552	20	8433 0349 47
S9-80-13CTADS	1/2	30 - 80	22 - 58	950	4.3	9.4	552	20	8433 0350 03
S9-90-13CTADS	1/2	27 - 90	19 - 65	520	4.3	9.4	552	20	8433 0350 14
S9-100-13CTADS	1/2	40 -100	30 - 73	800	4.4	9.7	595	25.5	8433 0350 22
S9-180-13CTADS	1/2	45 -180	33 -132	450	4.5	9.9	595	25.5	8433 0350 85
S9-270-20CTADS	3/4	65 -270	47 -198	250	7.4	16.3	661	33.5	8433 0352 39
S9-370-20CTADS	3/4	90 -370	66 -270	160	7.5	16.5	661	33.5	8433 0352 74
S9-450-20CTADS	3/4	135 -450	97 -324	150	10.0	22	702	54	8433 0353 15
S9-600-25CTADS	1	180 -600	130 -432	130	10.1	22.2	702	54	8433 0353 81
ETV S9 Flush Socket									
S9-80-CTADS-FS	-	30 - 80	22 - 58	950	4.7	10.3	552	20.3	8433 0350 09
S9-180-CTADS-FS	-	45 -180	33 -132	450	4.7	10.3	595	26	8433 0350 91
S9-270-CTADS-FS	-	65 -270	47 -198	250	7.4	16.3	661	34.2	8433 0352 45
S9-370-CTADS-FS	-	90 -370	66 -270	160	7.5	16.5	661	34.2	8433 0352 78
S9-600-FS	-	180 -600	130 -432	130	15.6	34.3	701	53	8433 0353 92
ETV S9 Hold & Drive									
S9-100-CTADS-HAD	-	40 -100	30 - 73	800	4.9	10.8	595	26	8433 0350 28
S9-180-CTADS-HAD	-	45 -180	33 -132	450	5.0	11.0	595	26	8433 0351 01
S9-270-HAD	-	65 -270	47 -198	250	8.2	18	661	34.3	8433 0352 46
S9-370-HAD	-	90 -370	66 -270	160	8.3	18.3	661	34.3	8433 0352 85

TENSOR S

Straight electric nutrunners

ETD S

- ETD S inline tools. The low torque series is ideal for hand-held bench assembly. The high torque tools are excellent for fixtured applications.
- Torque range from 1 to 4000 Nm (higher torque models available on request).
- Telescopic spindles for fixtured applications.
- Female hex drives for bits.

Model	Square drive in	Torque Nm	Torque ft lb	Speed r/min	Weight kg	Weight lb	Length mm	CS distance mm	Spline/ Mounting	Ordering No.
ETD S4										
S4-04-10CTADS	3/8	1 - 5	0.7 - 3.6	1465	1.4	3.1	381	28	– / 1	8433 0237 81
S4-10-10CTADS	3/8	3 - 14	2.2 - 10.3	690	1.4	3.1	381	28	– / 1	8433 0238 18
S4-20-10CTADS	3/8	5 - 20	3.6 - 15	415	1.4	3.1	381	28	– / 1	8433 0239 72
ETD S4 Telescopic										
S4-04-10CTADST	3/8	1 - 5	0.7 - 3.6	1465	1.5	3.3	419	28	2 / 2	8433 0237 94
S4-10-10CTADST	3/8	3 - 14	2.2 - 10.3	690	1.5	3.3	419	28	2 / 2	8433 0238 79
S4-20-10CTADST	3/8	5 - 20	3.6 - 15	415	1.5	3.3	419	28	2 / 2	8433 0239 84
ETD S4 Female Hex										
S4-02-I06CTADS	1/4	0.5 - 2.5	0.35 - 1.8	2930	1.4	3.1	372	28	– / 1	8433 0237 43
S4-04-I06CTADS	1/4	1 - 5	0.7 - 3.6	1465	1.4	3.1	372	28	– / 1	8433 0237 47
S4-10-I06CTADS	1/4	3 - 14	2.2 - 10.3	690	1.5	3.3	372	28	– / 1	8433 0238 06
ETD S7										
S7-20-10CTADS	3/8	5 - 20	3.6 - 15	1380	1.6	3.6	411	28	– / 1	8433 0294 42
S7-30-10CTADS	3/8	6 - 35	4.4 - 25	830	1.6	3.6	411	28	– / 1	8433 0295 07
S7-50-13CTADS	1/2	10 - 55	7.3 - 40	595	2.1	4.7	456	28	2 / 2	8433 0297 37
S7-70-13CTADS	1/2	14 - 80	11 - 58	410	2.4	4.7	477	29.5	2 / 2	8433 0298 04
S7-90-13CTADS	1/2	20 - 95	15 - 69	335	2.8	6.2	477	29.5	2 / 2	8433 0299 11
S7-120-13CTADS	1/2	25 - 125	18 - 91	280	2.9	6.5	477	29.5	2 / 2	8433 0299 72
ETD S7 Telescopic										
S7-20-10CTADST	3/8	5 - 20	3.6 - 15	1380	1.7	3.8	450	28	2 / 2	8433 0294 81
S7-20-10CTADS-T50	3/8	5 - 20	3.6 - 15	1380	1.8	4.0	500	28	2 / 2	8433 0294 85
S7-30-10CTADST	3/8	6 - 35	4.4 - 25	830	1.7	3.8	450	28	2 / 2	8433 0295 21
S7-30-10CTADS-T50	3/8	6 - 35	4.4 - 25	830	1.8	4.0	500	28	2 / 2	8433 0295 84
S7-50-13CTADST	1/2	10 - 55	7.3 - 40	595	2.2	4.9	483	28	3 / 5	8433 0297 83
S7-50-13CTADS-T50	1/2	10 - 55	7.3 - 40	595	2.3	5.1	540	28	3 / 5	8433 0297 94
S7-70-13CTADST	1/2	14 - 80	11 - 58	410	2.5	5.6	504	29.5	3 / 5	8433 0298 34
S7-70-13CTADS-T50	1/2	14 - 80	11 - 58	410	2.6	5.7	562	29.5	3 / 5	8433 0298 63
S7-90-13CTADST	1/2	20 - 95	15 - 69	335	2.9	6.5	504	29.5	3 / 5	8433 0299 41
S7-90-13CTADS-T50	1/2	20 - 95	15 - 69	335	3.0	6.6	562	29.5	3 / 5	8433 0299 43
S7-120-13CTADST	1/2	25 - 125	18 - 91	280	3.0	6.7	504	29.5	3 / 5	8433 0299 85
S7-120-13CTADS-T50	1/2	25 - 125	18 - 91	280	3.1	6.8	562	29.5	3 / 5	8433 0299 93
S7-140-13CTADST	1/2	35 - 140	26 - 103	280	3.0	6.7	504	29.5	3 / 5	8433 0299 98
ETD S7 Ball Retainer										
S7-30-B10CTADS	3/8	6 - 35	3.6 - 15	830	1.6	3.6	411	28	– / 1	8433 0295 09
S7-50-B13CTADS	1/2	10 - 55	7.3 - 40	595	2.1	4.7	456	28	2 / 2	8433 0297 56
S7-70-B13CTADS	1/2	14 - 80	11 - 58	410	2.4	4.7	477	29.5	2 / 2	8433 0298 07
ETD S7 Female Hex										
S7-20-I06CTADS	1/4	5 - 20	3.6 - 15	1380	1.6	3.6	402	28	– / 1	8433 0294 47
ETD S9										
S9-100-13CTADS	1/2	25 - 100	19 - 73	795	4.0	8.9	547	31.8	2 / 2	8433 0361 52
S9-200-13CTADS	1/2	50 - 200	36 - 146	370	4.1	9.1	547	31.8	2 / 2	8433 0362 38
S9-270-20CTADS	3/4	65 - 270	47 - 198	250	6.5	14.5	603	36	6 / 8	8433 0363 83
S9-450-20CTADS	3/4	110 - 450	80 - 330	140	7.9	17.6	639	40.3	6 / 8	8433 0364 52
S9-600-20CTADS	3/4	150 - 600	110 - 440	120	7.9	17.6	639	40.3	6 / 8	8433 0364 82
S9-1000-25CTADS	1	250 - 1000	180 - 730	76	12.6	27.7	770	46.8	7 / 11	8433 0365 32
S9-2000-38CTADS	1 1/2	500 - 2000	360 - 1460	38	16.8	37.0	727	67.8	8 / 12	8433 0366 15
S9-4000-38CTADS	1 1/2	1000 - 4000	730 - 2920	18	21.9	48.2	903	68	8 / 12	8433 0366 40
ETD S9 Telescopic										
S9-100-13CTADST	1/2	25 - 100	19 - 73	795	4.1	9.1	574	31.8	3 / 5	8433 0362 08
S9-150-13CTADST	1/2	40 - 150	30 - 110	510	4.2	9.4	574	31.8	3 / 5	8433 0362 24
S9-200-13CTADST	1/2	50 - 200	36 - 146	370	4.2	9.4	574	31.8	3 / 8	8433 0362 55
S9-270-20CTADST	3/4	65 - 270	47 - 198	250	6.7	14.9	653	36	6 / 8	8433 0364 12
S9-450-20CTADST	3/4	110 - 450	80 - 330	140	8.0	17.8	689	40.3	6 / 8	8433 0364 61
S9-600-20CTADST	3/4	150 - 600	110 - 440	120	8.0	17.8	689	40.3	6 / 8	8433 0364 96
S9-1000-25CTADST	1	250 - 1000	180 - 730	76	13.0	29.0	824	46.8	7 / 11	8433 0365 14
S9-2000-38CTADST	1 1/2	500 - 2000	360 - 1460	38	18.0	39.6	820	67.8	8 / 12	8433 0366 20

TENSOR S

Pistol grip electric nutrunners

ETP S

- ETP S pistol grip tool for both hand-held and fixtured applications.
- Torque range from 1 to 2000 Nm (higher torque models available on request).
- Telescopic spindles for fixtured applications.
- Female hex quick change drives for bits.

Model	Square drive in	Torque Nm	Torque ft lb	Speed r/min	Weight kg	Weight lb	Length mm	CS distance mm	Spline/ Mounting	Ordering No.
ETP S4										
S4-10-06CTADS	1/4	3 - 12	2.2 - 8.8	735	1.2	2.7	192	21.3	– / –	8433 0235 11
S4-10-10CTADS	3/8	3 - 12	2.2 - 8.8	735	1.2	2.7	194	21.3	– / –	8433 0235 39
S4-20-10CTADS	3/8	5 - 20	3.6 - 15	415	1.7	3.7	243	21.3	– / –	8433 0235 64
ETP S4 Female Hex										
S4-02-I06CTADS	1/4	0.5 - 2.5	0.35 - 1.8	2930	1.2	2.7	200	21.3	– / –	8433 0233 50
S42-02-I06	1/4	0.5 - 2.5	0.35 - 1.8	3275	0.9	2.0	188	21.3	– / –	8433 0233 61
S4-04-I06CTADS	1/4	1 - 5	0.7 - 3.6	1465	1.2	2.7	200	21.3	– / –	8433 0234 75
S42-04-I06	1/4	1 - 5	0.7 - 3.6	1965	0.9	2.0	188	21.3	– / –	8433 0234 84
S4-10-I06CTADS	1/4	3 - 12	2.2 - 8.8	735	1.2	2.7	200	21.3	– / –	8433 0235 01
S4-10-I06	1/4	3 - 12	2.2 - 8.8	1005	1.0	2.2	188	21.3	– / –	8433 0235 45
ETP S4 Ball Retainer										
S4-10-B10CTADS	3/8	3 - 12	2.2 - 8.8	735	1.2	2.7	194	21.3	– / –	8433 0235 53
ETP S7										
S7-20-10CTADS	3/8	5 - 20	3.6 - 15	1380	1.9	4.2	274	21.5	– / 1	8433 0313 84
S7-30-10CTADS	3/8	6 - 35	4.4 - 25	830	1.9	4.2	274	21.5	– / 1	8433 0314 03
S7-50-13CTADS	1/2	10 - 55	7.3 - 40	595	2.2	4.9	318	26.8	2 / 2	8433 0314 91
S7-70-13CTADS	1/2	14 - 80	11 - 58	410	2.4	5.4	340	29.5	2 / 2	8433 0315 02
S7-90-13CTADS	1/2	20 - 95	15 - 69	533	2.5	5.6	340	29.5	2 / 2	8433 0315 27
S7-120-13CTADS	1/2	25 - 125	18 - 91	280	2.7	6.0	340	29.5	2 / 2	8433 0315 43
ETP S7 Telescopic										
S7-30-10CTADST	3/8	6 - 35	4.4 - 25	830	2.0	4.4	313	21.5	2 / 2	8433 0314 15
S7-120-13CTADST	1/2	25 - 125	18 - 91	280	2.9	6.4	367	29.5	3 / 5	8433 0315 59
ETP S7 Female Hex										
S7-20-I06CTADS	1/4	5 - 20	3.6 - 15	1380	1.9	4.2	265	21.5	– / 1	8433 0313 61
S7-30-I06CTADS	1/4	6 - 35	4.4 - 25	830	1.9	4.2	265	21.5	– / 1	8433 0314 28
ETP S7 Ball Retainer										
S7-30-B10CTADS	3/8	6 - 35	4.4 - 25	830	1.9	4.2	274	21.5	– / 1	8433 0314 18
ETP S9										
S9-70-13CTADS	1/2	25 - 70	18 - 49	1180	3.7	8.3	395	31.8	2 / 2	8433 0367 19
S9-100-13CTADS	1/2	40 - 100	29 - 73	795	3.9	8.7	395	31.8	2 / 2	8433 0367 45
S9-200-13CTADS	1/2	50 - 200	36 - 146	370	3.9	8.7	395	31.8	2 / 2	8433 0367 86
S9-270-20CTADS	3/4	65 - 270	47 - 198	250	6.5	14.5	451	36	6 / 8	8433 0368 52
S9-450-20CTADS	3/4	110 - 450	80 - 330	140	7.9	17.6	487	40.5	6 / 8	8433 0368 99
S9-600-20CTADS	3/4	150 - 600	110 - 440	120	7.9	17.8	487	40.5	6 / 8	8433 0369 38
S9-1000-25CTADS	1	250 - 1000	180 - 730	76	12.7	28.3	615	47.5	7 / 11	8433 0370 11
S9-2000-38CTADS	1 1/2	500 - 2000	360 - 1460	38	16.8	37.0	583	67.8	8 / 12	8433 0371 05
ETP S9 Telescopic										
S9-100-13CTADST	1/2	40 - 100	29 - 73	795	4.0	8.8	422	31.8	3 / 5	8433 0367 51
S9-270-20CTADST	3/4	65 - 270	47 - 198	250	6.7	14.8	501	36	6 / 8	8433 0368 63
S9-450-20CTADST	3/4	110 - 450	80 - 330	140	8.0	17.6	537	40.3	6 / 8	8433 0369 07
S9-600-20CTADST	3/4	150 - 600	110 - 440	120	8.0	17.6	537	40.3	6 / 8	8433 0369 53
S9-1000-25CTADST	1	250 - 1000	180 - 730	76	13.0	29.0	669	46.8	7 / 11	8433 0370 31

TENSOR S

Fixtured electric nutrunners

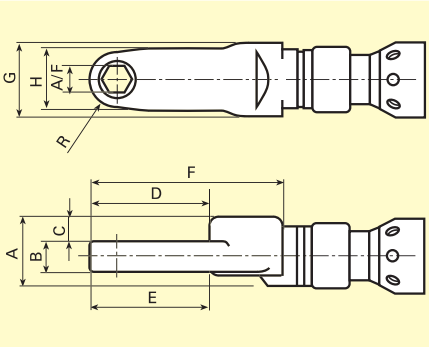
ETF S

- ETF S inline tools specially designed for build-in and fixtured applications.
- Torque range from 1.5 to 1500 Nm (higher torque models available on request).
- Extra high durability.
- Remote start configuration, only.
- Small centre to side distance.
- Telescopic spindles.
- Easy cable routing.

Model	Square drive in	Torque Nm	Torque ft lb	Speed r/min	Weight kg	Weight lb	Length mm	CS distance mm	Spline	Ordering No.
ETF S4										
S4-10-10CTADS	3/8	3 - 12	2.2 - 8.8	700	1.3	2.9	360	21.5	–	8433 0102 37
ETF S4 Telescopic										
S4-05-10CTADST	3/8	1.5 - 5	0.7 - 3.6	1460	1.3	2.9	399	21.5	2	8433 0102 23
S4-10-10CTADST	3/8	3 - 12	2.2 - 8.8	700	1.3	2.9	399	21.5	2	8433 0102 39
ETF S7 Telescopic										
S7-15-10CTADST	3/8	4 - 15	2.9 - 11	1090	1.5	3.3	430	21.5	2	8433 0105 48
S7-25-10CTADST	3/8	5 - 25	3.6 - 18	680	1.5	3.3	430	21.5	2	8433 0105 67
S7-40-13CTADST	1/2	8 - 40	6 - 29	480	2.1	4.7	463	26.8	3	8433 0105 91
S7-50-13CTADST	1/2	10 - 55	7.3 - 40	305	2.4	5.4	484	29.5	3	8433 0106 04
S7-70-13CTADST	1/2	14 - 80	11 - 58	270	2.8	6.2	484	29.5	3	8433 0106 49
S7-100-13CTADST	1/2	20 - 110	15 - 80	225	2.9	6.5	484	29.5	3	8433 0106 70
ETF S9										
S9-80-13CTADS	1/2	20 - 80	15 - 58	595	4.0	8.9	527	31.8	2	8433 0111 10
S9-120-13CTADS	1/2	30 - 120	22 - 88	380	4.1	9.1	527	31.8	2	8433 0111 30
S9-180-13CTADS	1/2	45 - 180	33 - 132	275	4.1	9.1	527	31.8	2	8433 0111 50
S9-250-20CTADS	3/4	70 - 250	50 - 182	185	6.5	14.5	583	36	6	8433 0111 70
S9-400-20CTADS	3/4	100 - 400	73 - 292	105	7.9	17.6	619	40.3	6	8433 0112 00
S9-500-20CTADS	3/4	125 - 500	92 - 365	90	7.9	17.6	619	40.3	6	8433 0112 20
S9-1000-25CTADS	1	250 -1000	190 - 730	46	13.0	28.6	749	46.8	7	8433 0112 45
ETF S9 Telescopic										
S9-80-13CTADST	1/2	20 - 80	15 - 58	595	4.1	9.1	554	31.8	3	8433 0111 20
S9-120-13CTADST	1/2	30 - 120	22 - 88	380	4.2	9.4	554	31.8	3	8433 0111 40
S9-180-13CTADST	1/2	45 - 180	33 - 132	275	4.2	9.4	554	31.8	3	8433 0111 60
S9-250-20CTADST	3/4	70 - 250	50 - 182	185	6.7	14.9	633	36	6	8433 0111 80
S9-400-20CTADST	3/4	100 - 400	73 - 292	105	8.0	17.8	669	40.3	6	8433 0112 10
S9-500-20CTADST	3/4	125 - 500	92 - 365	90	8.0	17.8	669	40.3	6	8433 0112 30
S9-800-25CTADST	1	200 - 800	146 - 584	57	13.0	28.6	804	46.8	7	8433 0112 40
S9-1500-38CTADST	1 1/2	375 -1500	274 -1095	29	18.0	39.6	800	67.8	8	8433 0112 50

TENSOR S
Crowfoot tools

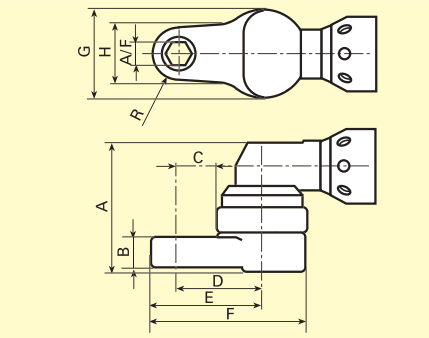
In-Line crowfoot tools
DIMENSIONS

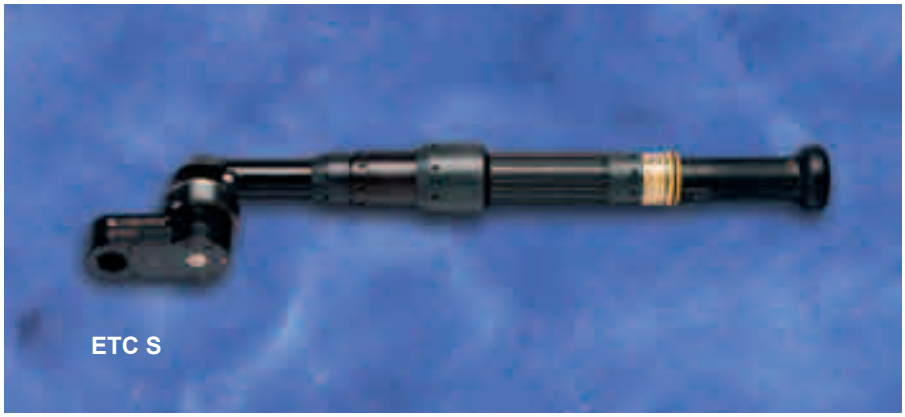


Model	Torque Nm	Torque ft lb	Speed r/min	Weight kg	Weight lb	Length mm	A/F mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	R mm	Ordering No.
ETC S7																	
S7-25-13-LI3	6 - 28	4.4 - 20.7	622	2.1	4.6	508	13	34	15	13	59	71	94	35	30	13	8433 0210 90

For sockets, see separate ordering material (9833 1381 01)

Offset crowfoot tools
DIMENSIONS



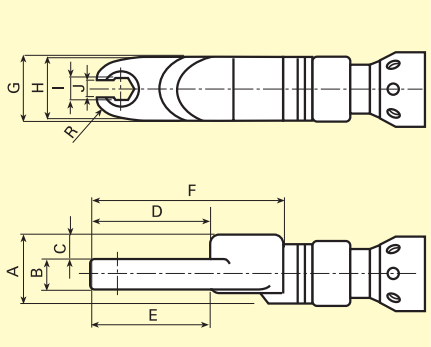


Model	Torque Nm	Torque ft lb	Speed r/min	Weight kg	Weight lb	Length mm	A/F mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	R mm	Ordering No.
ETC S4																	
S4-05-7-LO3	1 - 5	0.7 - 3.7	940	1.7	3.7	401	7	56	9	6	25	32	47	37	15	7.5	8433 0210 04
S4-08-8-LO3	2 - 9.5	1.5 - 7	874	1.7	3.7	403	8	60	14	8	26	34	49	37	16	8	8433 0210 08
ETC S7																	
S7-15-10-LO5	3.5 - 18	2.6 - 13.3	1297	1.9	4.2	475	10	60	15	48	66	76	91	37	22	10	8433 0210 12
S7-20-13-LO3	4.6 - 23	3.4 - 17	887	1.9	4.2	461	13	58	10	25	47	62	82	44	31	14.5	8433 0210 16
S7-25-13-LO3	5.6 - 28	4.2 - 20.7	887	2.0	4.4	455	13	62	15	20	42	55	76	44	30	13	8433 0210 23
S7-25-13-LO5	5.6 - 28	4.2 - 20.7	887	2.2	4.9	515	13	68	15	62	84	97	118	44	30	13	8433 0210 29
S7-40-13-LO3	8.8 - 44	6.5 - 32.5	533	2.4	5.2	479	13	68	18	25	47	62	82	44	31	14.5	8433 0210 34
S7-40-13-LO5	8.8 - 44	6.5 - 32.5	533	2.4	5.2	526	13	69	18	72	94	108	129	44	31	14.5	8433 0210 38
S7-60-17-LO3	13 - 65	9.6 - 48.1	382	2.8	6.1	507	17	77	24	29	51	66	89	48	30	15	8433 0210 46
S7-60-17-LO5	13 - 65	9.6 - 48.1	382	3.4	7.4	558	17	81	24	78	102	117	140	48	30	15	8433 0210 56
S7-80-21-LO3	18 - 90	13.3 - 66.6	263	3.4	7.6	585	21	90	20	35	66	86	112	63	40	20	8433 0210 60
S7-80-21-LO5	18 - 90	13.3 - 66.6	263	4.3	9.4	651	21	92	20	101	132	152	178	63	40	20	8433 0210 65
ETC S7 Extra heavy duty																	
S7-40-13-AO3	8 - 40	6 - 29	545	2.4	5.5	487	13	60.3	19	33	53	69	86	40	17	16	8433 0211 15
S7-70-17-AO3	14 - 70	11 - 51	390	3.2	7.0	528	17	66.5	19	45	68	87	107	45	21	19.5	8433 0211 32
S7-120-17-AO3	24 - 120	18 - 88	185	4.6	10.1	586	17	88	25	42	68	88	113	51	25	19.8	8433 0211 55
S7-140-17-AO3	28 - 140	21 - 103	160	4.6	10.1	587	17	88	25	42	68	88	113	51	25	19.8	8433 0211 75
ETC S9																	
S9-140-21-LO3	30 - 150	22.2 - 111	320	5.7	12.6	655	21	101	33	35	66	86	112	63	40	20	8433 0210 75
S9-200-21-LO3	43 - 215	31.8 - 159.1	205	10.4	22.9	718	21	146	40	33	70	91	125	77	42	21	8433 0210 80

For sockets, see separate ordering material (9833 1381 01)

TENSOR S
Tube nut tools

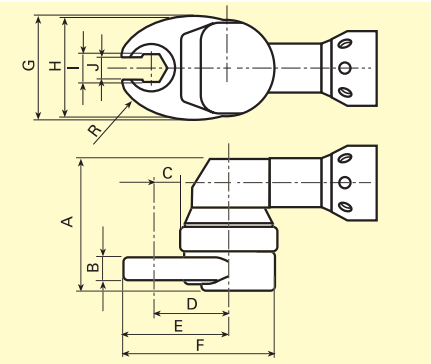
In-Line tube nut tools
DIMENSIONS



Model	Torque Nm	Torque ft lb	Speed r/min	Weight kg	Weight lb	Length mm	A/F mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	R mm	Ordering No.
ETO S4																		
S4-10-10-LI3	2.5 - 12	1.9 - 8.9	555	1.7	3.8	450	10	32	10	13	37	26	67	34	31	7	11.5	8433 0212 05
ETO S7																		
S7-15-10-LI3	3 - 15	2.2 - 11.1	1458	1.9	4.2	484	10	32	12	11	39	26	68	34	32	8	14	8433 0212 10
S7-18-13-LI3	3.6 - 18	2.7 - 13.3	1035	1.9	4.2	500	13	34	11	15	49	32	84	35	38	8.5	16	8433 0212 15
S7-30-13-LI3	6.6 - 33	4.7 - 24.3	630	2.6	5.6	526	13	43	18	14	47	31	83	38	40	10.4	25	8433 0212 21
S7-35-13-LI3	7 - 35	5.2 - 25.9	610	2.8	6.1	570	13	46	11	21	70	48	113	45	55	12.5	32	8433 0212 25
S7-50-17-LI3	11 - 55	8.2 - 40.7	405	3.2	6.9	658	17	46	12	20	81	39	124	45	59	16	32	8433 0212 35
S7-80-19-LI3	16 - 80	11.9 - 59.2	314	3.7	8.1	629	19	46	18	17	74	52	137	64	59	17	32	8433 0212 40

For sockets, see separate ordering material (9833 1381 01)

Offset tube nut tools
DIMENSIONS



Model	Torque Nm	Torque ft lb	Speed r/min	Weight kg	Weight lb	Length mm	A/F mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	R mm	Ordering No.
ETO S4																		
S4-08-8-LO3	1.7 - 8.5	1.3 - 6.3	648	1.7	3.7	398	8	59	11	4	22	30	45	37	29	6	10	8433 0212 50
ETO S7																		
S7-10-10-LO3	2.4 - 12	1.8 - 8.9	1880	1.8	4.0	435	10	59	10	7	25	35	50	37	31	7	11.5	8433 0212 60
S7-18-13-LO3	3.6 - 18	2.7 - 13.3	1297	2.0	4.4	442	13	61	11	8	30	42	63	44	38	8	15	8433 0212 68
S7-25-13-LO3	5.6 - 28	4.2 - 20.7	533	2.1	4.7	470	13	65	11	13	37	52	75	48	50	11	31	8433 0212 75
S7-50-17-LO3	11 - 55	8.2 - 40.7	382	3.0	6.7	510	17	76	12	18	49	69	97	63	59	16	32	8433 0212 80
S7-80-19-LO3	16 - 80	11.9 - 59.2	263	3.9	8.5	568	19	91	18	18	49	63	97	63	59	17	32	8433 0212 85
S7-100-24-LO3	22 - 110	16.3 - 81.4	179	4.5	10.0	580	24	92	20	23	60	85	119	74	77	21	33	8433 0212 90

For sockets, see separate ordering material (9833 1381 01)

TENSOR ST
Angle electric nutrunners

ETV ST

- ETV ST right angle tools are ideal for hand-held applications.
- Torque range from 1 to 200 Nm.
- Tensor ST complements the S range by:
  - Extremely high productivity.
  - More ergonomic benefits.
  - Better operator feedback.

Model	Square drive in	Torque Nm	Torque ft lb	Speed r/min	Weight kg	Weight lb	Length mm	CS distance mm	Height mm	Ordering No.
ETV ST31										
ST31-05-10	3/8	1 - 5	0.7 - 3.6	2390	1.0	2.2	381.5	11	39.3	8433 2011 21
ST31-10-10	3/8	3 - 12	2.2 - 8.8	1020	1.0	2.2	381.5	11	39.3	8433 2013 66
ST31-15-10	3/8	5 - 15	3.6 - 10	755	1.0	2.2	381.5	11	39.3	8433 2015 98
ST31-20-10	3/8	5 - 22	3.7 -16.1	545	1.2	2.6	415	14	42	8433 2017 10
ETV ST31 Ball Retainer										
ST31-05-B10	3/8	1 - 5	0.7 - 3.6	2390	1.0	2.2	381.5	11	39.3	8433 2011 87
ST31-10-B10	3/8	3 - 12	2.2 - 8.8	1020	1.0	2.2	381.5	11	39.3	8433 2014 12
ST31-15-B10	3/8	5 - 15	3.6 - 10	755	1.0	2.2	381.5	11	39.3	8433 2016 36
ST31-20-B10	3/8	5 - 22	3.7 -16.1	545	1.2	2.6	415	14	42	8433 2018 23
ETV ST61										
ST61-28-10	3/8	6 - 29	4 - 21	1450	1.3	2.9	440	14	42	8433 2021 76
ST61-30-10	3/8	7 - 35	5 - 25	1090	1.3	2.9	440	14	42	8433 2023 91
ST61-40-10	3/8	8 - 40	6 - 29	1090	1.5	3.3	454	18	47	8433 2027 85
ST61-50-10	3/8	10 - 55	7 - 40	655	1.5	3.3	454	18	47	8433 2031 58
ST61-70-13	1/2	15 - 80	10 - 58	475	2.0	4.5	466	20	58	8433 2035 30
ST61-100-13	1/2	20 -100	15 - 80	365	2.5	5.5	481	20	58	8433 2039 01
ST61-150-13	1/2	30 -160	22 -117	220	3.0	6.6	536	25.5	69.5	8433 2042 70
ST61-200-13	1/2	40 -210	30 -154	185	3.0	6.6	356	25.5	69.5	8433 2046 38
ETV ST61 Ball retainer										
ST61-28-B10	3/8	6 - 29	4 - 21	1450	1.3	2.9	440	14	40.5	8433 2022 32
ST61-30-B10	3/8	7 - 35	5 - 25	1090	1.3	2.9	440	14	40.5	8433 2025 08
ST61-40-B10	3/8	8 - 40	6 - 29	1090	1.5	3.3	454	18	46.3	8433 2029 13
ST61-50-B10	3/8	10 - 55	7 - 40	655	1.5	3.3	454	18	46.3	8433 2032 87
ST61-70-B13	1/2	15 - 80	10 - 58	475	2.0	4.5	466	20	56.5	8433 2036 93
ST61-100-B13	1/2	20 -110	15 - 80	365	2.5	5.5	481	20	58	8433 2040 69
ST61-150-B13	1/2	30 -160	22 -117	220	3	6.6	536	25.5	69.5	8433 2043 62
ST61-200-B13	1/2	40 -210	30 -154	185	3	6.6	536	25.5	69.5	8433 2047 15
ETV ST61 Flush socket										
ST61-28-FS13	-	6 - 29	4 - 21	1450	1.3	2.9	440	14	34.5	8433 2022 56
ST61-28-FS516	-	6 - 29	4 - 21	1450	1.3	2.9	440	14	34.5	8433 2022 79
ST61-30-FS13	-	7 - 35	5 - 25	1090	1.3	2.9	440	14	34.5	8433 2025 62
ST61-40-FS13	-	8 - 40	6 - 29	1090	1.5	3.3	454	18	39	8433 2029 64
ST61-50-FS13	-	10 - 55	7 - 40	655	1.5	3.3	454	18	39	8433 2033 28
ST61-70-FS-S	-	15 - 80	10 - 58	475	2	4.5	466	20	49.5	8433 2037 35
ST61-100-FS-S	-	20 -110	15 - 80	365	2.5	5.5	496	20	49.5	8433 2040 95
ST61-150-FS	-	30 -160	22 -117	220	3	6.6	537	26	55.5	8433 2044 14
ST61-200-FS	-	40 -210	30 -154	185	3	6.6	537	26	55.5	8433 2047 20
ETV ST61 Hold And Drive										
ST61-28-HAD	-	6 - 29	4 - 21	1450	1.9	4.2	463	18.3	80	8433 2023 20
ST61-30-HAD	-	7 - 35	5 - 25	1090	1.9	4.2	463	18.3	80	8433 2026 24
ST61-40-HAD	-	8 - 40	6 - 29	1090	2.0	4.4	454	18.3	80	8433 2030 07
ST61-50-HAD	-	10 - 55	7 - 40	655	2.0	4.4	454	18.3	80	8433 2033 91
ST61-90-HAD-S	-	20 - 95	15 - 70	400	2.1	4.5	522	26	80	8433 2038 25
ST61-120-HAD-S	-	30 -130	22 -100	305	2.6	5.5	540	26	80	8433 2041 52
ST61-150-HAD-S	-	30 -160	22 -117	220	3.1	6.6	540	26	80	8433 2044 79
ST61-200-HAD-S	-	40 -210	30 -154	185	3.1	6.6	540	26	80	8433 2048 26

TENSOR ST

Angle electric nutrunners

Model	Square drive in	Torque Nm	Torque ft lb	Speed r/min	Weight kg	Weight lb	Length mm	CS distance mm	Height mm	Ordering No.
ETV ST81										
ST81-50-10	3/8	16 - 55	12 - 40	1090	1.8	3.9	473	18	47	8433 2051 55
ST81-70-13	1/2	20 - 80	15 - 58	790	2.3	5.0	485	20	58	8433 2053 48
ST81-100-13	1/2	20 - 110	15 - 80	570	2.7	5.9	500	20	58	8433 2056 81
ST81-150-13	1/2	30 - 160	22 - 117	365	3.2	7.0	555	25.5	69.5	8433 2060 12
ST81-200-13	1/2	40 - 210	30 - 154	300	3.2	7.0	555	25.5	69.5	8433 2063 41
ETV ST81 Ball retainer										
ST81-50-B10	3/8	16 - 55	12 - 40	1090	1.8	3.9	473	18	46.3	8433 2052 36
ST81-70-B13	1/2	20 - 80	15 - 58	790	2.3	5.0	485	20	56.5	8433 2054 62
ST81-150-B13	1/2	30 - 160	22 - 117	365	3.3	7.0	555	25.5	69.5	8433 2060 97
ST81-200-B13	1/2	40 - 210	30 - 154	300	3.2	7.0	555	25.5	69.5	8433 2064 08
ETV ST81 Flush socket										
ST81-50-FS	-	16 - 55	12 - 40	1090	1.8	3.9	472	18	39	8433 2052 53
ST81-70-FS-S	-	20 - 80	15 - 58	790	2.3	5.0	497	20	49.5	8433 2055 07
ST81-100-FS-S	-	20 - 110	15 - 80	570	2.7	5.9	516	20	49.5	8433 2058 69
ST81-150-FS	-	30 - 160	22 - 117	365	3.2	7.0	557	26	55.5	8433 2061 32
ST81-200-FS	-	40 - 210	30 - 154	300	3.2	7.0	557	26	55.5	8433 2064 58
ETV ST81 Hold And Drive										
ST81-50-HAD	-	16 - 55	12 - 40	1090	2.3	5.0	473	18.5	80	8433 2052 79
ST81-90-HAD-S	-	20 - 95	15 - 70	665	2.4	5.1	540	26	80	8433 2056 03
ST81-120-HAD-S	-	30 - 130	22 - 100	480	2.8	6.0	560	26	80	8433 2058 64
ST81-150-HAD-S	-	30 - 160	22 - 117	365	3.3	7.0	560	26	80	8433 2061 80
ST81-200-HAD-S	-	40 - 210	30 - 154	300	3.3	7.0	560	26	80	8433 2065 08

TENSOR ST

Straight electric nutrunners

ETD ST

- ETD ST inline tools.
- Torque range from 1 to 50 Nm.
- Tensor ST complements the S range by ensuring extremely high levels of productivity and better operator feedback.

Model	Square drive in	Torque Nm	Torque ft lb	Speed r/min	Weight kg	Weight lb	Length mm	CS distance mm	Ordering No.
ETD ST31									
ST31-05-10	3/8	1 - 5	1.1 - 3.6	2825	0.9	2.0	388	24	8433 2112 42
ST31-10-10	3/8	2 - 10	2.2 - 7.2	1200	1.1	2.4	388	24	8433 2114 86
ETD ST31 Ball Retainer									
ST31-05-B10	3/8	1 - 5	1.1 - 3.6	2825	0.9	2.0	388	24	8433 2113 13
ST31-10-B10	3/8	2 - 10	2.2 - 7.2	1200	1.1	2.4	388	24	8433 2115 97
ETD ST31 Telescopic									
ST31-05-10-T25	3/8	1 - 5	1.1 - 3.6	2825	0.9	2.0	437	24	8433 2111 34
ST31-05-10-T25	3/8	2 - 10	2.2 - 7.2	1200	1.1	2.4	437	24	8433 2113 79
ETD ST31 Ball Retainer Telescopic									
ST31-05-B10-T25	3/8	1 - 5	1.1 - 3.6	2825	1.1	2.4	437	24	8433 2113 44
ST31-10-B10-T25	3/8	2 - 10	2.2 - 7.2	1200	1.1	2.4	437	24	8433 2116 33
ETD ST31 Female Hex									
ST31-05-I06	1/4	1 - 5	1.1 - 3.6	2825	0.9	2.0	350	24	8433 2112 87
ETD ST61									
ST61-15-10	3/8	4 - 16	3 - 12	2250	1.4	3.1	438	24	8433 2120 91
ST61-20-10	3/8	5 - 22	3.6 - 16	1700	1.4	3.1	438	24	8433 2122 62
ST61-30-10	3/8	6 - 35	4.4 - 25	1020	1.4	3.1	429	24	8433 2125 06
ST61-50-13	1/2	10 - 55	7.3 - 40	740	1.9	4.2	474	24	8433 2128 79
ST61-70-13	1/2	15 - 80	12 - 58	505	2.3	5.0	491	15	8433 2132 51
ST61-90-13	1/2	20 - 95	15 - 70	410	2.3	5.0	491	15	8433 2136 22
ST61-120-13	1/2	25 -125	19 - 95	305	2.3	5.0	491	15	8433 2139 90
ETD ST61 Telescopic									
ST61-15-10-T25	3/8	4 - 16	3 - 12	2250	1.5	3.3	477	24	8433 2120 43
ST61-15-10-T50	3/8	4 - 16	3 - 12	2250	1.6	3.5	527	24	8433 2120 68
ST61-20-10-T25	3/8	5 - 20	3.6 - 15	1700	1.5	3.3	477	24	8433 2121 55
ST61-20-10-T50	3/8	5 - 20	3.6 - 15	1700	1.6	3.5	527	24	8433 2122 03
ST61-30-10-T25	3/8	6 - 35	4.4 - 25	1020	1.5	3.3	468	24	8433 2123 80
ST61-30-10-T50	3/8	6 - 35	4.4 - 25	1020	1.6	3.5	519	24	8433 2124 45
ST61-50-13-T25	1/2	10 - 55	7.3 - 40	740	2.1	4.6	501	24	8433 2127 54
ST61-50-13-T50	1/2	10 - 55	7.3 - 40	740	2.1	4.7	519	24	8433 2131 82
ST61-70-13-T25	1/2	15 - 80	12 - 58	505	2.4	5.4	518	17	8433 2131 27
ST61-90-13-T25	1/2	20 - 95	15 - 70	410	2.4	5.4	518	17	8433 2134 99
ST61-120-13-T25	1/2	25 -125	19 - 95	305	2.4	5.4	518	17	8433 2138 68
ETD ST61 Ball Retainer									
ST61-15-B10	3/8	4 - 16	3 - 12	2250	1.4	3.1	438	24	8433 2121 07
ST61-20-B10	3/8	4 - 16	3 - 12	1700	1.4	3.1	438	24	8433 2122 12
ETD ST61 Female Hex									
ST61-15-I06	1/4	4 - 16	3 - 12	2250	1.4	3.1	430	24	8433 2121 36
ST61-20-I06	1/4	5 - 22	3.6 - 16	1700	1.4	3.1	430	24	8433 2122 43
ETD ST81									
ST81-30-10	1/2	10 - 30	7 - 22	1700	1.8	4.0	450	24	8433 2151 93
ST81-50-13	1/2	16 - 50	12 - 37	1230	2.1	4.6	493	24	8433 2153 34
ST81-70-13	1/2	15 - 70	12 - 51	880	2.5	5.5	510	15	8433 2156 03
ST81-90-13	1/2	20 - 95	15 - 70	675	2.5	5.5	510	15	8433 2158 14
ST81-120-13	1/2	25 -125	19 - 91	505	2.5	5.5	510	15	8433 2160 25
ETD ST81 Telescopic									
ST81-30-10-T25	3/8	10 - 30	7 - 22	1700	1.9	4.2	488	24	8433 2151 21
ST81-30-10-T50	3/8	10 - 30	7 - 22	1700	2.0	4.4	437	24	8433 2151 54
ST81-50-13-T25	1/2	16 - 50	12 - 37	1230	2.3	5.0	520	24	8433 2152 72
ST81-70-13-T25	1/2	15 - 70	12 - 51	880	2.6	5.8	538	17	8433 2154 98
ST81-90-13-T25	1/2	20 - 95	15 - 70	675	2.6	5.8	538	17	8433 2157 25
ST81-120-13-T25	1/2	25 -125	19 - 91	505	2.6	5.8	538	17	8433 2159 53

DS/DL 300 Drive

Tensor DS/DL Controller

Applications

The Tensor DS nutrunner and DL screwdriver series has been developed to give you the benefits of controlled tightening and advanced electric systems throughout your assembly operations. Electric controlled tightening can significantly reduce your assembly costs and improve overall productivity. The simplicity and reliability, combined with outstanding flexibility and accuracy, makes the Tensor DS and DL series a given alternative for your quality critical applications.The systems have a well proven track record of premium quality and reliability in a multitude of industries, e.g. aerospace, automotive, construction, white goods and electronics.

DL Drive

DS Drive

Drive functionality overview

The drive is the heart of any electrical quality-fastening process. Used both to control and monitor tools, the DS and DL drives provide a high degree of functionality with minimal setup and configuration. The DS drive runs with the Tensor DS nutrunners and the DL drive is used together with Tensor DL screwdrivers. There are two functionality levels of the drives: The Basic (D302 and 303) model, for stations not requiring multi-torque capability, and the Advanced (D312 and 313) model.

Tensor DS and DL reduce costs

The Tensor DS and DL systems reduce costs through three major benefits:

Elimination of assembly problems

Through its control and monitoring functionality, Tensor DS/DL will bring you closer to zero fault production. By alerting the operator to the most common errors before they continue down the line, the system ensures high-quality end products, and saves you a fortune in reworking costs.

One tool for several applications

The Tensor DS/DL can be set with up to 10 different torque settings making it possible to use the same tool for several applications. This reduces operating costs and allows a cleaner design of the work area.

Tensor DS/DL improves productivity

The unsurpassed power-to-weight ratio together with the high speed of the tool makes it possible for reduced cycle times. The highly precise torque control system – DigiTork – ensures accuracies of +/- 10% over +/- 3 sigma.

POWER FOCUS
Tensor S and ST Controller

Market leader

Atlas Copco is the global market leader for fastening equipment and secures this position with the Power Focus product range.

Power Focus is a modular range of controllers with flexibility to be used for applications ranging from single spindle hand-held operations to fixtured multiple nutrunning systems. Advanced process control and monitoring functions make it easy to view and collect data using the Internet infrastructure.

Total quality control

The Power Focus can be combined with both Tensor S, Tensor ST or Tensor DS tools and is used to control the fastening and assembly process in the station. The Power Focus and associated software packages provide easy to understand information for everyone from operators to plant managers.

All the building blocks

The Power Focus is based on standard hardware and software components which when combined will fulfill all demands from the most basic non-networked system to a fully integrated unit with the factory network. The modules fit together using the 'plug and play' concept.

Control the assembly process

The Power Focus incorporates advanced control functions to prevent the worker deviating from the required process. On receipt of assembly information, the Power Focus automatically selects the correct tightening sequence and parameters. This is a process control function called Job.

Built-in connectivity

Fastening data management and communications is a major requirement in modern assembly operations. Many plants demand to have instant fastening data accessible at different levels in the factory. Atlas Copco provides standardized communication solutions with a solid base for integration and the flexibility for future needs.

RBU cuts downtime

Atlas Copco's patented Rapid Backup Unit (RBU) concept transfers functionality to an non-configured hardware unit, ensuring that hardware can easily be upgraded should functionality requirements change. The RBU also acts as backup for programming and configuration. If a change of hardware is required, just fit the RBU to the new hardware, switch on the unit and you're ready. All programming and network configurations are transferred in seconds. The RBU cuts downtime to a minimum.

Three control units are available: Compact, Graph and Colour. All have the capability to power and control every Tensor S spindle produced.

Compact

Offers minimum hardware expenditure. Easily stackable to form multiple tool configurations.

Graph

Gives you full stand alone programming capability. Functions as a programming terminal for one or more compact units.

Colour

Provides full programming functionality, 12" TFT colour screen, built-in keyboard.

POWER FOCUS
Tensor S and ST Controller

StepSync spindle synchronization
Tensor spindles are easily fixtured using our standard range of TwinSpin components. StepSync synchronizes Tensor spindles to provide consistent clamp forces over the entire component mating face. Synchronization is performed via the proprietary I/O bus. Depending on user-interface preferences and budget, the SyncMaster may be a Compact, Graph or Colour hardware unit.

MultiStage functionality reduces relaxation
The inherent 'MultiStage' functionality permits the combination of up to eight different parameter sets in a linear sequence. The entire process is activated with just one press of the tool trigger. For joint conditioning, fasteners can be run down to a pre-torque value, backed off by a configurable number of degrees and then re-tightened to the desired final torque. This advanced functionality is ideal for reducing relaxation in a joint.

Network the controllers with 'Cells'
The 'Cell' concept provides a network without the need for a PC. A 'Cell' may comprise up to 20 units, with a 'CellMaster' (Compact, Graph or Colour) and the appropriate number of 'CellMembers'. If the 'Master' is a Graph unit, it can function as a programming and monitoring console for the other 'CellMembers', via the high-speed integral Ethernet network. This saves space and cuts hardware costs.

Tensor spindles are easily fixtured using our standard range of TwinSpin components. StepSync synchronizes Tensor spindles to provide consistent clamp forces over the entire component mating face.

Advanced statistics for better quality control
Statistical data is collected, analyzed and presented on the Power Focus Graph screen. Diagnostics and statistical alarms such as SPC monitor charts, and capability (Cpk) alarms highlight changes and trends in the assembly process. Effective information and SPC are good motivators, and encourage operators to adopt a proactive approach in monitoring the quality of the assembly process.

CONTROLLER SOFTWARE

Functionality
The functionality is unlocked with a key called RBU (Rapid Backup Unit). This patented device gives you access to the functionality you need and provides backup for your individually programmed data. Four levels of functionality are available: Gold, Silver, Bronze and DS.

DS
- Stand alone functionality:
- DS tools only
- 64 PSETs
- Integrated Ethernet
- OK/NOK reporting
- Job functionality
- MultiStage functionality
- Cell functionality
- Fieldbus option

Bronze
- Stand alone functionality:
- 64 PSETs
- Autoset
- Batch count

Silver
- All the functionality of the bronze plus:
- 250 PSETs
- Integrated Ethernet
- Job functionality
- MultiStage functionality
- Cell functionality
- SPC
- Fieldbus options

Gold
- All the functionality of the silver plus:
- Advanced line control (Cell Job)
- Synchronisation in a cell

Communication levels

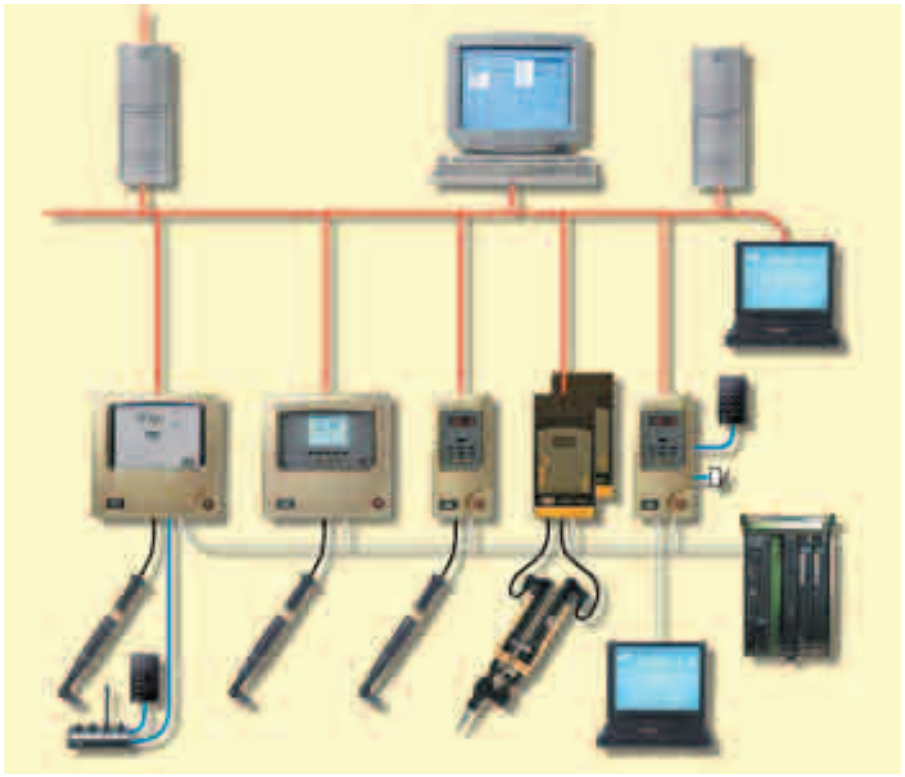
Cell level
The cell is a key concept in the system design. It is a cluster of max 20 controllers networked together via built-in Ethernet TCP/IP. No need for use of a PC.

Factory level
Power Focus can be integrated with the factory Ethernet network which enables easy access and reporting anywhere in the plant.

Internet level
World wide communication is a matter of giving access through a factory network gateway to Power Focus.

Controller level
Realtime communication over I/O bus independent of the factory net.

Fieldbus level
The most common field buses are supported. Profibus, DeviceNet, Interbus, modbus+.



Discrete I/O, I/O bus, Fieldbus, Compact, Graph, Colour, PC, access router, host database.

SOFTWARE
Configuration and analysis software

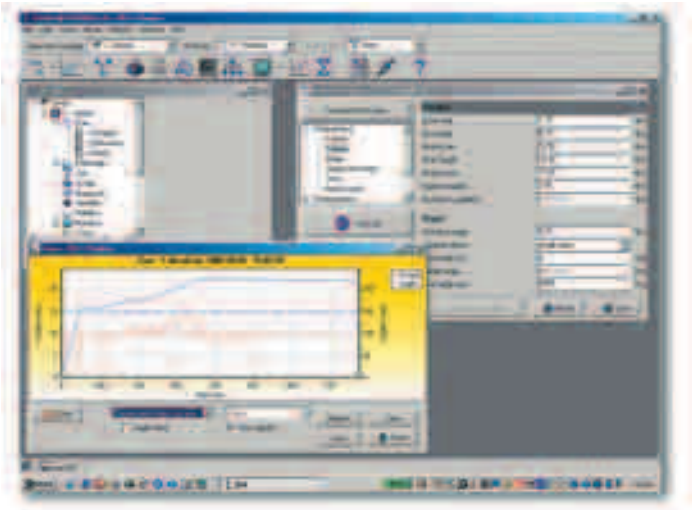
ToolsTalk DS/DL – PC-based programming

ToolsTalk DS/DL allows complete programming of your DS/DL Drive. There are three programming levels: AutoSet (sets target torque), QuickProg (sets target torque and joint hardness) and Full Programming. Connect your PC to the drive via the serial RS232 port, open the ToolsTalk DS/DL software application and you are talking to the drive. As simple as that. Programming structure is intuitive, logical and easy to follow.

ToolsTalk PF – remote programming

ToolsTalk PF adds the capability to program parameters in all versions of Power Focus 3100 hardware/software configurations, via a user-friendly PC interface. For customized reporting, ToolsTalk can retrieve all results from a specified controller. With a simple click, these results can then be imported directly into other commercial software such as MS Excel etc.

ToolsTalk PF communicates with the Power Focus 3100 control systems via an RS232 serial connection or an Ethernet TCP/IP, either direct or, as is more common in modern plants, via the factory network from the office.



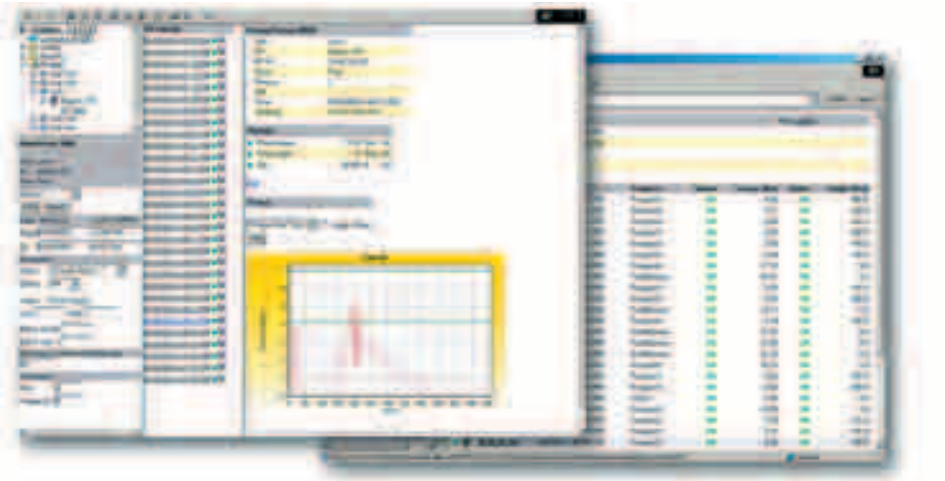
POWER FOCUS

Data collection and process improvement software

ToolsNet – Process improvement

ToolsNet 3000 is a data collection and process improvement software application for use with Power Focus and PowerMACS control systems. Combined, these products provide total control of the assembly process, providing a platform for quality improvements. Historical data, statistics and capability indexes can be accessed at any time via a standard web browser such as MS Explorer. ToolsNet is the complete assembly process improvement tool.

Data can be presented historically or in real time. Vehicle and Shift reports are easy to generate.



Traceability minimizes recall costs

Data can be presented historically or in real time and Shift reports are easily generated to satisfy production managers.

In the event of warranty recalls, the result database provides access to critical information which can easily minimize the extent of any recall leading to an overnight payback on your investment.

Event Monitor – events in real time

Integrate the Event Monitor software application within your plant architecture and monitor Power Focus events remotely, as they occur on the assembly line, in real time.

Event Monitor can immediately alert your office PC if the Cpk on a specific controller has dropped below a specified level, or if a tool at a specific workstation requires preventative maintenance.

Event Monitor is web based. Data can be accessed from anywhere in the plant, using a standard web browser such as MS Explorer.

Factory Overview – visualization

When used with Power Focus control systems, Factory Overview provides real time monitoring and visualization of the production process. Factory Overview is a visual aid that presents the momentary status of the assembly process for a factory, line or workstation in an easy-to-comprehend form, from anywhere in the factory.

This object-orientated concept enables tooling, quality and maintenance engineers to access all plant data in real time. Factory Overview ensures significant performance gains throughout the entire assembly process.

Factory Overview also provides a single portal through which all other Atlas Copco Assembly Management software applications, such as ToolsTalk PF, ToolsNet and Event Monitor, can be accessed.

TENSOR
Functionality overview

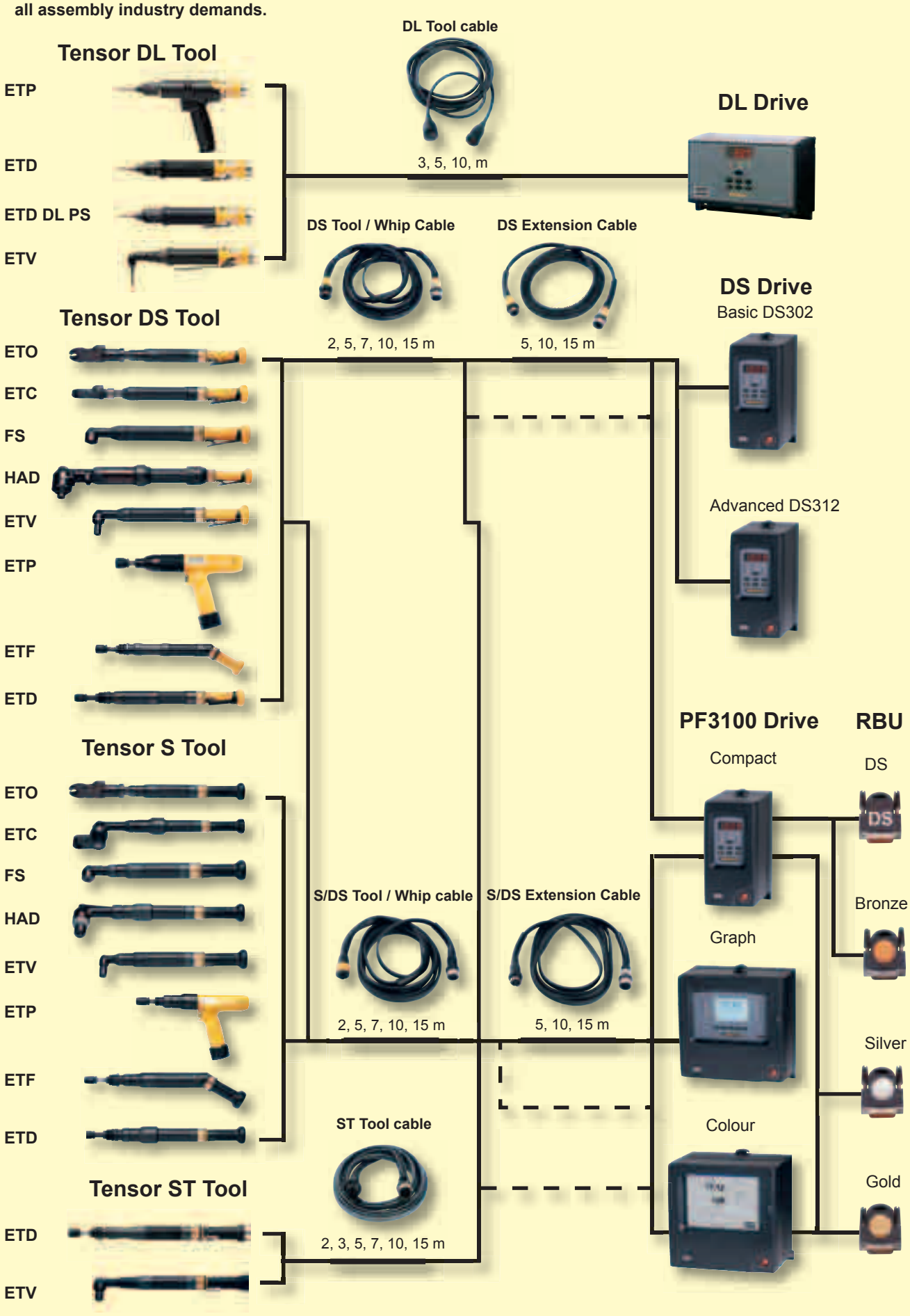
General	DS / DL 300		Power Focus 3100			
Functionality Level / RBU Runs Tool Types	Basic DS / DL	Advanced DS /DL	DS DS	Bronze S / ST	Silver DS / S / ST	Gold DS / S / ST
Tensor controllers						
Compact hardware	x	x	x	x	x	x
LED display	x	x	x	x	x	x
6 button keyboard	x	x	x	x	x	x
Graph hardware					x	x
LCD display					x	x
Full keyboard					x	x
Color hardware					x	x
12” TFT colour display					x	x
Touch screen and PC keyboard					x	x
Functionality						
Number of tools	1	1	1	1	1	1
Number of Psets	1	10	64	64	250	250
Batch count	x	x	x	x	x	x
Open end spanner	x	x	x	x	x	x
Quick programming	x	x	x	x	x	x
Cross thread / Rehit detection	x	x	x	x	x	x
Tool service indicator	x	x	x	x	x	x
Autoset	x	x	x	x	x	x
Lock on reject	x	x	x	x	x	x
Line control		x	x		x	x
Transducer torque traceability				x	x	x
Tightening status storage			5 000	5 000	5 000	5 000
Tightening data storage				5 000	5 000	5 000
MultiStages			8		8	8
Trace storage				8	8	8
Real time statistics				x	x	x
SPC				x	x	x
RBU			x	x	x	x
Bar code reading			x		x	x
ID input to select Pset			x		x	x
Job function			x		x	x
Number of jobs			32		99	99
ID input to select job			x		x	x
Complex job sequencing			x		x	x
Cell programming			x		x	x
Label printer (via Open protocol)			x		x	x
Cell Job						x
Strategies and options						
Two stage/Quick step/Ergoramp	x	x	x	x	x	x
Torque control and angle monitoring	x	x	x	x	x	x
DS control	x	x	x		x	x
Auto zoom step	x	x	x	x	x	x
CW / CCW operation	x	x	x	x	x	x
Rundown angle monitoring	x	x	x	x	x	x
Self tap / PVT monitoring	x	x	x	x	x	x
Reverse angle		x	x	x	x	x
Rotate spindle		x	x	x	x	x
Click wrench input				x	x	x
Torque and angle control				x	x	x
Torque or angle control				x	x	x
Angle control and torque monitoring				x	x	x
Step sync						x
I/O						
RS232 programming port	x	x	x	x	x	x
Discrete I/O	x	x	x	x	x	x
Remote start	x	x	x	x	x	x
Socket selector (optional)		x	x	x	x	x
RE Alarm (optional)		x	x	x	x	x
Parallel printer port			x	x	x	x
I/O Expander (optional)			x	x	x	x
Expandable I/O (up to 124 in / 124 out)			x	x	x	x
Operator ID card input			x		x	x
Fieldbus card			Optional		Optional	Optional
RS232 bar code reader port			x		x	x
Easily programmed fieldbus protocol			x		x	x
Ethernet port for remote prog			x		x	x
Ethernet port for data collection			x		x	x

TENSOR
Functionality overview

General	DS / DL 300		Power Focus 3100			
Functionality Level / RBU Runs Tool Types	**Basic DS / DL**	**Advanced DS / DL**	**DS DS**	**Bronze S / ST**	**Silver DS / S / ST**	**Gold DS / S / ST**
Tensor controllers						
Protocols						
Open protocol serial			x	x	x	x
Open protocol Siemens 3964R serial			x	x	x	x
Open protocol Ethernet			x		x	x
API			x		x	x
Double open protocol sessions			x		x	x
ToolsTalk World 03						
ToolsTalk Functionality						
Serial connection	x	x	x	x	x	x
Off line programming	x	x	x	x	x	x
Real time analysis	x	x	x	x	x	x
Tightening database to PC (Excel)			x	x	x	x
Tightening simulation			x	x	x	x
Operator monitor			x	x	x	x
Picture monitor			x	x	x	x
Fieldbus quick set-up			x		x	x
Job monitor			x		x	x
Bar code reader configration			x		x	x
Ethernet connection			x		x	x
Remote programming			x		x	x
View tightening traces				x	x	x
Overlay traces				x	x	x
Factory Overview World 03						
Factory Overview Functionality						
Visualisation of controllers on line			x		x	x
Real time tightening status			x		x	x
ToolsTalk link			x		x	x
Event Monitor link			x		x	x
ToolsNet link			x		x	x
Power Focus idle indicator			x		x	x
Network connection indicator			x		x	x
Event indicator			x		x	x
Real time CPK			x		x	x
ToolsNet World 03						
ToolsNet Functionality						
Data collection			OK-NOK		x	x
Data evaluation					x	x
Data linked to ID			x		x	x
Date range filtering					x	x
Web browser interface			x		x	x
Client / server solution			x		x	x
Auto uploading of missing data			x		x	x
Access / Oracle / SQL compatibility			x		x	x
Shift reports			x		x	x
Vehicle reports			x		x	x
Full data analysis capablities					x	x
Customised reports			x		x	x
View tightening traces					x	x
Statistical analysis, histograms, SPC					x	x
Event Monitor World 03						
Event Monitor Functionality						
Web browser interface			x		x	x
Real time event monitoring			x		x	x
Configurable event severity			x		x	x
Event grouping functions			x		x	x
Event filtering			x		x	x
Event acknowledgement			x		x	x
Event observation (with comments)			x		x	x
Event history			x		x	x

TENSOR MODULARITY

The Tensor family uses a modular concept based on standard hardware and software. Combined, it will fulfill all assembly industry demands.



TENSOR
Drives and software

Controller hardware

Model	Ordering No.
DL Drive	
D303-DL Basic	8433 4850 48
D313-DL Advanced	8433 4850 33
DS Drive	
D302-DS4 Basic	8433 0820 48
D312-DS4 Advanced	8433 0820 33
D302-DS7 Basic	8433 0822 48
D312-DS7 Advanced	8433 0822 33
D302-DS9 Basic	8433 0824 48
D312-DS9 Advanced	8433 0824 33
Power Focus 3100 Combo Tensor S/DS/ST	
PF 3107-G-HW	8433 2700 00
PF 3107-C-HW	8433 2700 05
PF 3107-COLOUR-HW	8433 2700 07
PF 3107-G-DN-HW	8433 2740 00
PF 3107-C-DN-HW	8433 2740 05
PF 3107-G-PB-HW	8433 2742 00
PF 3107-C-PB-HW	8433 2742 05
PF 3107-G-IB-HW	8433 2745 00
PF 3107-C-IB-HW	8433 2745 05
PF 3107-G-EIP-HW	8433 2749 00
PF 3107-C-EIP-HW	8433 2749 05
PF 3109-G-HW	8433 2900 00
PF 3109-C-HW	8433 2900 05
PF 3109-COLOUR-HW	8433 2900 07
PF 3109-G-DN-HW	8433 2940 00
PF 3109-C-DN-HW	8433 2940 05
PF 3109-G-PB-HW	8433 2942 00
PF 3109-C-PB-HW	8433 2942 05
PF 3109-G-IB-HW	8433 2945 00
PF 3109-C-IB-HW	8433 2945 05
PF 3109-G-EIP-HW	8433 2949 00
PF 3109-C-EIP-HW	8433 2949 05

Controller software

Software	Ordering No.
RBU-Bronze	8433 0010 10
RBU-Silver	8433 0015 20
RBU-Gold	8433 0020 20
RBU-DS	8433 0005 10

Software modules

Model		Ordering No.
ToolsNet World 03		
5	Spindle license	8092 1156 05
10	Spindle license	8092 1156 10
25	Spindle license	8092 1156 25
50	Spindle license	8092 1156 50
75	Spindle license	8092 1156 75
125	Spindle license	8092 1156 80
200	Spindle license	8092 1156 85
350	Spindle license	8092 1156 90
500	Spindle license	8092 1156 95
Factory Overview World 03		
5	Spindle license	8092 1158 05
10	Spindle license	8092 1158 10
25	Spindle license	8092 1158 25
50	Spindle license	8092 1158 50
75	Spindle license	8092 1158 75
125	Spindle license	8092 1158 80
200	Spindle license	8092 1158 85
350	Spindle license	8092 1158 90
500	Spindle license	8092 1158 95
Event Monitor World 03		
05	Spindle license	8092 1157 05
10	Spindle license	8092 1157 10
25	Spindle license	8092 1157 25
50	Spindle license	8092 1157 50
75	Spindle license	8092 1157 75
125	Spindle license	8092 1157 80
200	Spindle license	8092 1157 85
350	Spindle license	8092 1157 90
500	Spindle license	8092 1157 95
ToolsTalk DS/DL		
Swedish		8092 1138 60
English		8092 1138 62
German		8092 1138 64
French		8092 1138 66
Spanish		8092 1138 68
Italian		8092 1138 70
ToolsTalk PF3000 World 03		
1-user license		8092 1163 01
5-user license		8092 1163 05
10-user license		8092 1163 10
Plant license		8092 1163 99
www.pf3000.com – Interactive training		
2-user license		8092 1200 02
10-user license		8092 1200 10

DL Drive

Graph

Compact

Software

Interactive training

Colour

TENSOR
Cables and drive accessories

Cables for DS/S/ST/DL

Model	Ordering No.
Tensor DL	
Tool cable	
3 m	4220 2604 03
5 m	4220 2604 05
10 m	4220 2604 10
Extension cable	
3 m	4220 2704 03
5 m	4220 2704 05
10 m	4220 2704 10
Tensor DS	
Tool cable	
2 m	4220 1616 02
5 m	4220 1616 05
7 m	4220 1616 07
10 m	4220 1616 10
15 m	4220 1616 15
Extension cable	
5 m	4220 2047 05
10 m	4220 2047 10
15 m	4220 2047 15
Extension cables for fixtured applications	
5 m	4220 2046 05
10 m	4220 2046 10
15 m	4220 2046 15
Tensor S	
Tool cable	
2 m	4220 0982 02
3 m	4220 0982 03
5 m	4220 0982 05
7 m	4220 0982 07
10 m	4220 0982 10
15 m	4220 0982 15
Extension cable	
5 m	4220 1007 05
10 m	4220 1007 10
15 m	4220 1007 15
Extension cables for fixtured applications	
5 m	4220 1563 05
10 m	4220 1563 10
15 m	4220 1563 15
Cables with 90 degrees connector	
5 m	4220 1560 05
10 m	4220 1560 10
15 m	4220 1560 15
Cable with loop for high flexibility	
5 m	4220 1845 05
10 m	4220 1845 10
15 m	4220 1845 15
Tensor ST[a]	
Tool cable	
2 m	4220 2636 02
3 m	4220 2636 03
5 m	4220 2636 05
7 m	4220 2636 07
10 m	4220 2636 10
15 m	4220 2636 15
Spiral cable (length/stretched length)	
3 m / 4 m	4220 2757 03
7 m / 8 m	4220 2757 07
10 m / 12 m	4220 2757 10
Cable protection	4220 2977 90

[a] Tensor S extension cables are fully compatible with Tensor ST.

Start handle

Controller accessories

Model	Ordering No.
Selector 4	8433 0610 04
Selector 8	8433 0610 08
Rotary selector	8433 0606 15
RE-Alarm	8433 0560 03
I/O Expander	8433 0564 38
Start handle	4220 1391 91
Accessory cables	
I/O bus cable 0.5 m	4222 0470 00
I/O bus cable 1 m	4222 0470 01
I/O bus cable 3 m	4222 0470 03
I/O bus cable 5 m	4222 0470 05
I/O bus cable 10 m	4222 0470 10
I/O bus cable 15 m	4222 0470 15
I/O Termination plug	4222 0443 00
Ethernet cables	
Crossed 0.5 m	4222 0682 00
Crossed 1 m	4222 0682 01
Crossed 3 m	4222 0682 03
Crossed 5 m	4222 0682 05
Crossed 10 m	4222 0682 10
Crossed 15 m	4222 0682 15
Crossed 25 m	4222 0682 25
Crossed 50 m	4222 0682 50
Straight 0.5 m	4222 0754 00
Straight 1 m	4222 0754 01
Straight 3 m	4222 0754 03
Straight 5 m	4222 0754 05
Straight 10 m	4222 0754 10
Straight 15 m	4222 0754 15
Straight 25 m	4222 0754 25
Straight 50 m	4222 0754 50

Manuals

Model	Ordering No.
Power Focus 3000	
English	9836 1648 01
Swedish	9836 1648 02
French	9836 1648 03
German	9836 1648 04
Spanish	9836 1648 05
Portugese	9836 1648 06
Italian	9836 1648 07
DS / DL Drive 300	
English	9836 2050 01
Swedish	9836 2050 02
French	9836 2050 03
German	9836 2050 04
Spanish	9836 2050 05
Portugese	9836 2050 06
Italian	9836 2050 07

These must be ordered separately.

RE-Alarm

I/O Expansion box

Selector 8

DL Cable

DS Tool cable

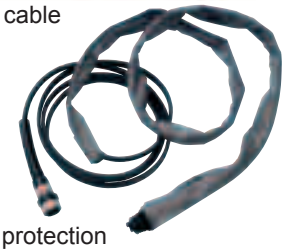
DS Extension cable for fixtured applications

S Cable with 90 degrees connector

S Cable with loop

ST Cable with loop

ST Spiral cable



ST cable protection

Supported extensions

Model	Extension	Ordering No.
ETV DS7/S7/ST6/ST8 40-50	142	4220 2209 80
	180	4220 2202 80
ETV DS7/S7/ST6/ST8 40-50	88	4220 2247 80
	226	4220 2203 80

Supported extensions

Suspension yokes

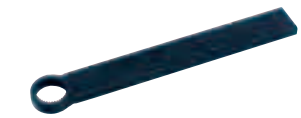
Model	Type	Assembly	Ordering No.
ETD/ETV/ETF S4	Fixed	Motor front nut	4220 1675 86
ETD/ETV/ETF S4/S7	Horizontal	Motor	4220 0987 80
ETD/ETV ST61	Horizontal	Motor	4220 2657 80
ETD/ETV S4/S7/S9	Vertical	Handles	4220 1417 80
ETD/ETV/ETF S9	Horizontal	Motor	4220 1418 93
ETP S4/S7	Horizontal	Motor	4220 1154 90

Suspension yokes

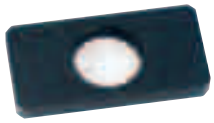
Reaction bars and mounting brackets

Number	Spline type	Type	L / W / H	Ordering No.
1	Spline type 0	Bracket	100/60/8	4220 1029 00
2	Spline type 2	Bracket	70/41/14	4210 2134 02
3		Triangular	73/72/14	4220 2137 02
4		Bar	270/35/14	4220 1903 00
5	Spline type 3	Bracket	100/50/12	4220 2219 03
6		Triangular	82/80/12	4220 2137 03
7		Bar	400/29/12	4220 2219 80
8	Spline type 6	Bracket	200/100/15	4220 1200 00
9		Triangular	112/109/15	4220 2137 06
10		Bar	560/80/15	4220 1200 01
11	Spline type 7	Bracket	250/150/20	4220 1445 00
12	Spline type 8	Bracket	250/160/20	4220 1972 00

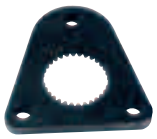
Mounting bracket is included for some tool models.
Please match the number from the table with the tool tables.



Reaction bar



Mounting bracket



Triangular

Pistol grip

Model	Ordering No.
Pistol grip DL	4220 2743 80

Pistol grip can be mounted on all straight DL tools.

Pistol grip DL

Extensions

Model	Length	Ordering No.
ETD/ETV/ETF DS4/S4	150	4220 1131 80
ETD DS7/S7 20-30	150	4220 1131 80
ETV DS7/S7 30-50	150	4220 1131 80
ETF DS7/S7 15-40	150	4220 1131 80
ETD/ETV/ETF DS4/S4	100	4220 1131 86
ETD S7 50-120	150	4220 1132 80
ETV S7 70-200	150	4220 1132 80
ETF S7 50-100	150	4220 1132 80
ETD S9 100	150	4220 1132 80
ETV S9 50	150	4220 1132 80
ETF S9 80	150	4220 1132 80
ETD/ETV DS7 70-200	150	4220 1714 80
ETD S9 200	150	4220 1132 81
ETD S9 200	100	4220 1132 82
ETD/ETV DS9/S9 270-370	150	4220 1585 80
ETD DS9/S9 450-600	150	4220 1585 85

Extension

Fixtured extensions

Model	Length	Ordering No.	For nut Ordering No.
ETV S4/S7 10-50	74	4220 2579 90	4220 0841 01
ETV DS4/DS7 10-50			4220 1640 01
ETV S7/S9 70-200	73	4220 2469 90	4220 0848 01
ETV DS7/DS9 70-200			4220 1663 01
ETV S9/DS9 270-600	91	4220 2614 90	Included

Fixtured extension

Lever

Model	Ordering No.
Lever	4220 1642 80
Extended lever	4220 1642 85
Safety lever	4220 2356 80

Lever DL

Model	Ordering No.
Lever	4220 2540 81
Extended lever	4220 2540 88

Protective cover Tensor DS and Tensor S

Model	Ordering No
ETV DS4/S4, DS7/S7 28-30	9040 0900 08
ETV S7 40-50	9040 0900 09
ETV S7 70-100	9040 0900 10
ETV S9 50	9040 0900 11
ETV DS7 40-50	9040 0900 33
ETV DS7 70-100	9040 0900 34
ETP S4/DS4 10	9040 0900 12

Protective cover Tensor ST

Model	Ordering No.
ETV ST31/ST61 28-30	4220 2744 03
ETV ST61 40-50/ST81 50	4220 2744 02
ETV ST61 70/ST81 70	4220 2744 04

Telescopic front parts for ETV

Model	Holder	Front part	Nut
DS7/S7 40/50	4220 1673 80	4220 1145 90	4220 0841 01
DS7/S7 70/100	4220 1811 81	4220 1135 95	4220 0848 01
DS7/S7 150/200	4220 1592 81	4220 1135 93	4220 0848 01
DS9/S9	4220 1960 80	4220 1179 91	Included

Torque multiplier

Model	Max Torque Nm	Gear ratio	Square in	Square out	Ordering No.
T-Mult 120	30	4.54	3/8	1/2	8431 0453 53
T-Mult 200	50	4.62	3/8	3/4	8433 0310 07
T-Mult 400	100	4.10	1/2	3/4	8431 0493 65
T-Mult 500	30	16.11	3/8	3/4	8433 0310 28
T-Mult 800	45	18.50	1/2	1	8433 0311 81
T-Mult 1000	250	4.00	3/4	1	8433 0312 16
T-Mult 1500	72	21.10	1/2	1	8433 0312 20

Mounting bracket and nut (included with T-mult)

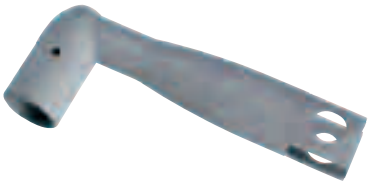
Model	Mounting bracket	Nut
T-Mult 120	4210 2134 00	4210 2135 00
T-Mult 200	4210 2219 03	4210 2218 00
T-Mult 400	4210 2183 00	4210 2182 00
T-Mult 500	4210 2183 00	4210 2182 00
T-Mult 800	4210 2726 00	4210 2725 00
T-Mult 1000	4210 2726 00	4210 2725 00
T-Mult 1500	4210 3899 80	4210 3936 00

Lever

Extended lever

Safety lever

Protective cover Tensor DS/S



Protective cover Tensor ST

Telescopic front part

Torque multiplier

Multiples by Express

Flexible and powerful

Why waste time and money reinventing the same solution when you can customize your multiples – by Express?

"Express" components are designed and manufactured by Atlas Copco. Our long experience, uncompromising quality and unrivalled R&D resources ensure products that meet the most stringent demands.

Short lead-time – fast response

The unique Express concept permits quotations, complete with specifications and dimensional drawings, in days rather than weeks. The secret is smart modular thinking (Express) and an outstanding logistics network. This means real savings – in time and money.

Stand Alone system – quick, easy and powerful.

Express mechanics

PowerMACS

PowerMACS/QMX

Where requirements for functionality, durability and flexibility are the highest, PowerMACS and the QMX nutrunners provide the solution for you.

PowerMACS is the controller/servo controlling the QMX nutrunners. These products are typically used for fixtured installations – automated, semi-automated or manually operated.

The PowerMACS controller can be built into a cabinet or used as a Stand Alone. The Stand Alone concept is a unique way of installing these advanced systems in a very simple manner, true plug & play. Advanced products do not have to mean complex handling any more.

The QMX nutrunners are extremely robust and durable, standing up to the toughest environments. At the same time they are small and fast, allowing ergonomically built multiples. Don't let your ergonomics requirements slip just because you are using a multiple.

- **Nutrunner sequencing** – This allows nutrunners to be sequenced at each phase of the tightening process allowing even distribution of torque to each fastener.
- **Even torque distribution** – Where there is uneven torque distribution, part damage or distortion could occur with possible fastener failure or loss of residual torque.
- **Snug, threshold, final torque in one pass** – No need for multiple torque stage sequencing as with a single nutrunner tool. Fixtured nutrunners save time and effort from start to finish.
- **No missed fasteners** – With multiple nutrunners there is a spindle dedicated to each location, ensuring quality on every rundown on every bolt.
- **Better residual torques** – Synchronized controlled fastening allows residual torque levels to be more consistent with the dynamic torque specification.
- **Saving in cycle time** – Compared with using a single nutrunner tool with many rundowns, running all fasteners simultaneously reduces in-station cycle time.
- **Cost saving benefits** – Saving in-station cycle time frees up operators to handle additional tasks and potentially reduce labor requirements, at the same time eliminating bottle necks.

PowerMACS

PowerMACS
Already ex-stock as a standard com-po-nent, PowerMACS is ready to take on the most demanding jobs. You do not have to add external devices to get going. Power it up, program it and you are ready to go.

It is also built to communicate. Connect the PowerMACS system to your network via the built-in Ethernet port or connect it to your fieldbus network (option) to communicate production data.

There is even a PLC on board, allowing you to program any logic sequence you like. The PLC is standard, included when you order a PowerMACS.

Production up-time is ensured by flash PROM memory and RAM back-up memory. We know the value for you of keeping production going and did not compromise on reliability when we designed this system.

- **Plenty of memory** for handling cycle data, statistics, SPC, cycle traces, station events, etc.
- **Peripheral support** for barcode readers, printers and special communication protocols.
- **API-Server** (Application Program Interface) software component using TCP/IP.
- **Fieldbus flexibility** to handle data and I/O communications.
- **On board operating system** with real time configurable PLC to handle all in-station functions.
- **True nutrunner synchronization** achieved using high speed internal Ethernet communications.
- **Installation flexibility** with external and panel mounted controllers.
- **Inertia braking capabilities** to absorb the inertia during a high speed run-down on a hard joint, allowing for productivity and accuracy at the same time.

PowerMACS – Tightening controllers

Model	Type	Ordering No.
Stand Alone TCs 570V/20A (IP54) for QMX42 – QMX62		
TC52 S-N	Stand Alone – No FieldBus	4240 0440 81
TC52 S-P	Stand Alone – ProfiBus	4240 0441 81
TC52 S-I	Stand Alone – InterBus	4240 0442 81
TC52 S-D	Stand Alone – DeviceNet	4240 0443 81
TC52 S-M	Stand Alone – ModBus Plus	4240 0444 81
Stand Alone TCs 570V/40A (IP54) for QMX80 – QMX90		
TC54 S-N	Stand Alone – No FieldBus	4240 0450 81
TC54 S-P	Stand Alone – ProfiBus	4240 0451 81
TC54 S-I	Stand Alone – InterBus	4240 0452 81
TC54 S-D	Stand Alone – DeviceNet	4240 0453 81
TC54 S-M	Stand Alone – ModBus Plus	4240 0454 81
Panel TCs (IP20) 570V/20A for QMX42 – QMX62		
TC52 P-N	Panel – No FieldBus	4240 0410 81
TC52 P-P	Panel – ProfiBus	4240 0411 81
TC52 P-I	Panel – InterBus	4240 0412 81
TC52 P-D	Panel – DeviceNet	4240 0413 81
TC52 P-M	Panel – ModBus Plus	4240 0414 81
Panel TCs (IP20) 570V/40A for QMX80 – QMX90		
TC54 P-N	Panel – No FieldBus	4240 0430 81
TC54 P-P	Panel – ProfiBus	4240 0431 81
TC54 P-I	Panel – InterBus	4240 0432 81
TC54 P-D	Panel – DeviceNet	4240 0433 81
TC54 P-M	Panel – ModBus Plus	4240 0434 81

PowerMACS
QMX nutrunners and cables

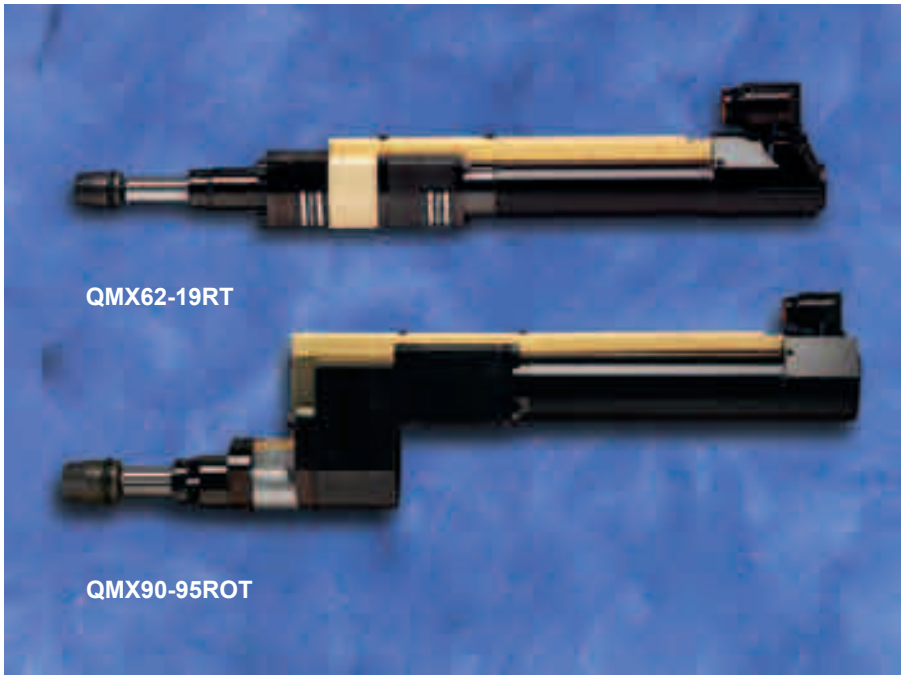
QMX nutrunners

QMX is designed to last in the toughest environments. With its high speed and outstanding durability it will meet your most stringent demands.

The electric motor in the QMX nutrunners is a proprietary Atlas Copco brushless DC motor. It is highly efficient, allowing for it to put out high power at a high cycle rate without overheating. The design uses resolver technology. All of this together allows QMX to be certified to the highest levels of both accuracy and durability.

Our range includes standard tools in several different configurations of which a sample appears in the catalogue. Should you require more information, please contact your local Atlas Copco representative.

- Resolver technology enables us to run unique tightening strategies and gauging applications.
- Increased productivity due to faster nutrunner speeds resulting from a higher bus voltage.
- Torque range from 6-4000 Nm.
- MTBF better than 5 million cycles, under normal conditions.
- Adjustable single cable connector design for cable management flexibility.
- ISO certified to +/- 2.5% accuracy and 1 million duty cycles on hard and soft joints.
- Excellent nutrunner C-C distances when comparing power-to-weight ratio.
- Low moment of rotor inertia, designed for high dynamic applications.
- Co-axial nutrunner design to handle dual nutrunner functionality on special applications.



QMX cables

Cable integrity is the most crucial component of any system. QMX cables are designed with a robust extruded connector and a super-flex jacket for increased durability.

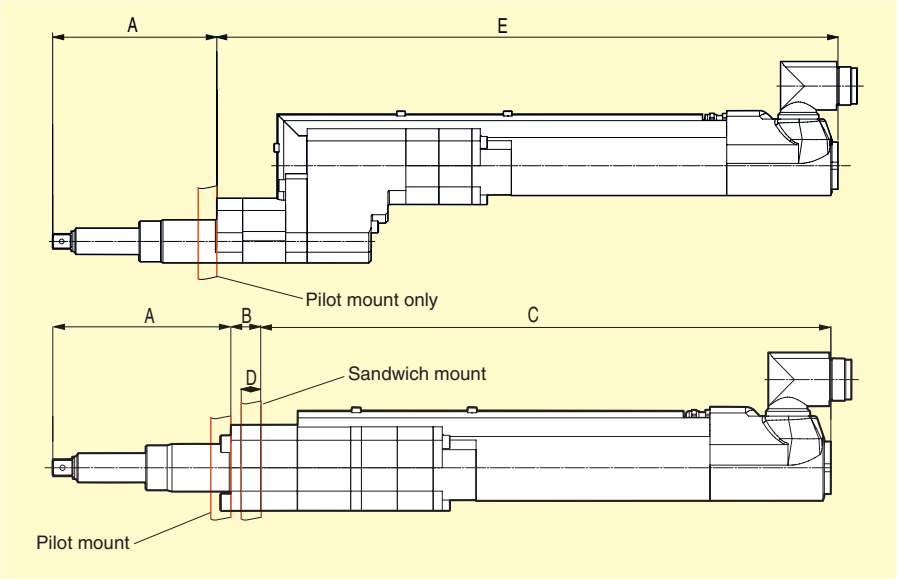
- Reduced spare parts due to a single cable design.
- 3-in-1 Power, Resolver, and Transducer connections built into one cable design.
- Super-flex cables provide increased life.
- Cable lengths in combinations up to 35 meters.

QRTT

Tranducers used for both QMX nutrunners and fixtured Tensor tool calibration. This transducer enables fast and easy set-up with highest system accuracy. By using the QRTT, no special test adapter between the nutrunner and the product itself is now needed (for further information see page 135).

Standard nutrunner

Atlas Copco standard DC electric brushless resolver nutrunners. These state-of-the-art nutrunners are used for a wide variety of fastening tasks.

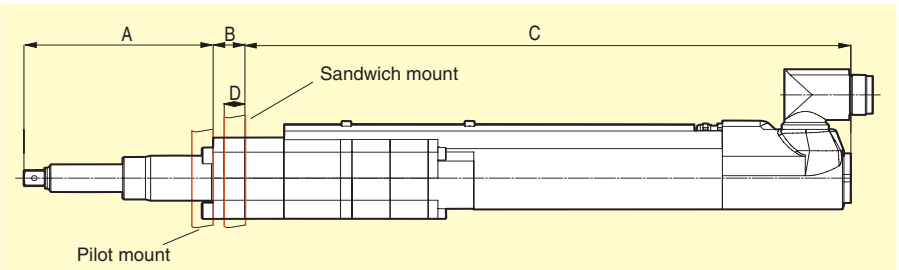


Model	Travel mm	Torque range Nm	Torque range ft lb	Max speed	Min C-C	Weight kg	Weight lb	Gear ratio	Socket holder size in	Ordering No.	Socket holder[a] Ordering No.	A mm	B mm	C mm	D mm	E mm
QMX42-2RT	50	6- 20	4- 14	1200	43	3.2	1.5	7.5	3/8	8432 5120 10	4230 1818 00	134	23	386	15	-
QMX42-2ROT	50	6- 18	4- 13	1200	31	4.3	2.0	7.5	3/8	8432 5120 20	4230 1818 00	134.5	-	-	-	436
QMX42-5RT	50	10- 50	7- 35	560	43	3.5	1.6	21.3	1/2	8432 5130 10	4230 1819 00	134	23	412	15	-
QMX42-5ROT	50	10- 50	7- 35	560	31	4.6	2.1	21.3	1/2	8432 5130 20	4230 1819 00	134.5	-	-	-	463
QMX50-9RT	50	20- 90	15- 65	560	51	5.9	2.7	18.2	1/2	8432 5140 10	4230 1820 00	137	23	462	15	-
QMX50-9ROT	50	20- 85	15- 60	560	37	8.1	3.7	18.2	1/2	8432 5140 20	4230 1820 00	137	-	-	-	519
QMX50-15RT	50	30- 150	22- 110	330	51	5.8	2.6	31.3	1/2	8432 5150 10	4230 1820 00	137	23	462	15	-
QMX50-15ROT	50	30- 145	22- 105	330	37	8.0	3.6	31.3	1/2	8432 5150 20	4230 1820 00	137	-	-	-	519
QMX62-19RT	50	40- 190	30- 140	330	63	9.5	4.3	19.4	5/8	8432 5160 10	4230 1821 00	152	25	525.5	15	-
QMX62-19RT	50	40- 190	30- 140	330	63	9.5	4.3	19.4	1/2	8432 5165 10	4230 1829 00	152	25	525.5	15	-
QMX62-19ROT	50	40- 180	30- 130	330	45	12.9	5.9	19.4	5/8	8432 5160 20	4230 1821 00	152.5	-	-	-	569.5
QMX62-32RT	50	70- 320	50- 235	200	63	10.2	4.6	32.1	3/4	8432 5170 10	4230 1822 00	152	25	527	15	-
QMX62-32ROT	50	70- 290	50- 210	200	45	13.5	6.1	32.1	3/4	8432 5170 20	4230 1822 00	152.5	-	-	-	571
QMX80-58RT	50	120- 580	90- 425	200	81	20.0	9.1	29.6	3/4	8432 5180 10	4230 1971 00	146	30	610	20	-
QMX80-58ROT	50	120- 550	90- 405	200	55	21.0	9.5	29.6	3/4	8432 5180 20	4230 1971 00	146	-	-	-	671.5
QMX90-95RT	50	200- 950	150- 700	130	91	22.0	10.0	46.8	1	8432 5190 10	4230 1824 00	152	32	621	20	-
QMX90-95ROT	50	200- 900	150- 660	130	63	30.0	13.6	46.8	1	8432 5190 20	4230 1824 00	152.5	-	-	-	698.5

[a] The socket holder is included in the product.

Extended spring travel 76 mm and 100 mm.

Atlas Copco special DC electric brushless resolver nutrunner with extended spring travel for longer bolt lengths.

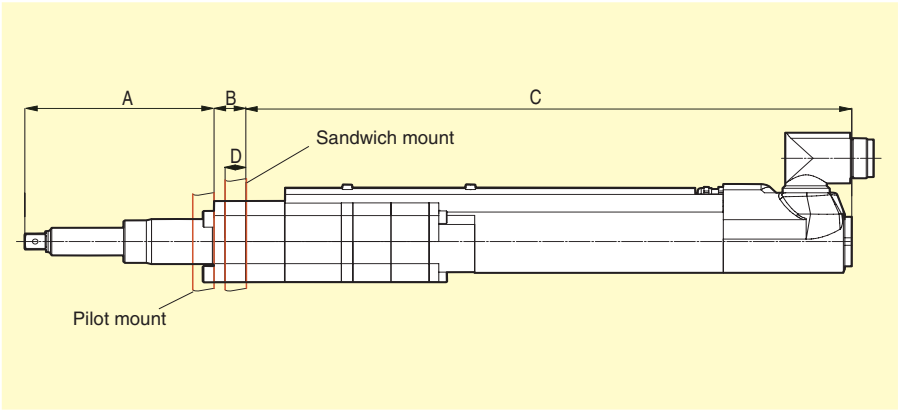


Model	Travel mm	Torque range Nm	Torque range ft lb	Max speed	Min C-C	Weight kg	Weight lb	Gear ratio	Socket holder size in	Ordering No.	Socket holder[a] Ordering No.	A mm	B mm	C mm	D mm
QMX42-2RT	76	6 - 20	4 - 14	1200	43	3.2	1.5	7.5	3/8	8432 5120 11	4231 0544 00	190	23	386	15
QMX42-5RT	76	10 - 50	7 - 35	560	43	3.7	1.7	21.3	1/2	8432 5130 11	4231 0544 01	190	23	412	15
QMX50-9RT	76	20 - 90	15 - 65	560	51	6.5	2.9	18.2	1/2	8432 5140 11	4231 0491 00	200	23	464	15
QMX50-15RT	76	30 - 150	22 - 110	330	51	7.0	3.2	31.3	1/2	8432 5150 11	4231 0491 00	201	25	462	15
QMX62-19RT	76	40 - 190	30 - 140	330	63	9.8	4.4	19.4	5/8	8432 5160 11	4231 0513 00	200	25	526	15
QMX62-19RT	76	40 - 190	30 - 140	330	63	9.8	4.4	19.4	1/2	8432 5165 11	4230 2189 00	200	25	526	15
QMX62-32RT	76	70 - 320	50 - 235	200	63	10.5	4.8	32.1	3/4	8432 5170 11	4231 0484 00	200	25	527	15
QMX80-58RT	76	120 - 580	90 - 425	200	81	21.0	9.5	29.6	3/4	9831 4048 04	4231 2664 00	214	43	623	20
QMX90-95RT	76	200 - 950	150 - 700	130	91	23.0	10.4	46.8	1	9831 4058 18	4231 1106 00	176	32	670	20
QMX42-5RT	100	10 - 50	7 - 35	560	43	8	3.6	21.3	3/8	9831 4045 53	4231 2055 00	191	23	510	15
QMX50-15RT	100	30 - 150	22 - 110	560	51	11	5.0	31.3	1/2	9831 4067 15	4231 3189 00	186	23	565	15

[a] The socket holder is included in the product.

Dual transducers, RTT.
Atlas Copco special DC electric brushless resolver nutrunners with dual torque transducer feedback. This allows for transducer redundancy, enabling verification that readings are within certain tolerances.

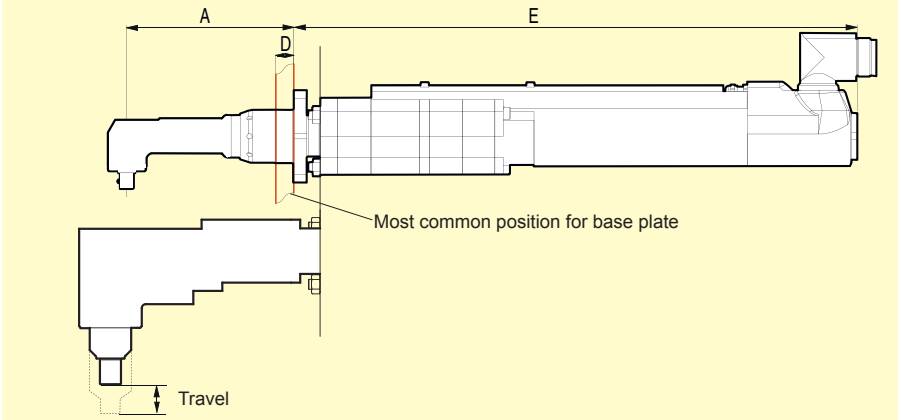
Dual transducers and angle feedback, RATT.
Atlas Copco special DC electric brushless resolver nutrunners with dual angle and torque transducer feedback. This allows for angle and torque verification to double-check system accuracy.



Model	Travel mm	Torque range Nm	Torque range ft lb	Max speed	Min C-C	Weight kg	Weight lb	Gear ratio	Socket holder size in	Ordering No.	Socket holder[a] Ordering No.	A mm	B mm	C mm	D mm
RTT															
QMX42-2RTT	50	6 - 20	4 - 14	1200	43	3.2	1.45	7.5	3/8	8432 5120 50	4230 1818 00	134	23	386	15
QMX42-5RTT	50	10 - 50	7 - 35	560	43	3.5	1.5	21.3	1/2	8432 5130 50	4230 1819 00	134	23	412	15
QMX50-9RTT	50	20 - 90	15 - 65	560	51	5.9	2.7	18.2	1/2	8432 5140 50	4230 1820 00	137	23	462	15
QMX50-15RTT	50	30 - 150	22 - 110	330	51	5.9	2.7	31.3	1/2	8432 5150 50	4230 1820 00	137	23	462	15
QMX62-19RTT	50	40 - 190	30 - 140	330	63	9.5	4.3	19.4	5/8	8432 5160 50	4230 1821 00	152	25	526	15
QMX62-32RTT	50	70 - 320	50 - 235	200	63	10.2	4.6	32.1	3/4	8432 5170 50	4230 1822 00	152	25	527	15
QMX80-58RTT	50	120 - 580	90 - 425	200	81	20	9.1	29.6	3/4	9831 4048 17	4230 1971 00	146	30	610	20
QMX90-95RTT	50	200 - 950	150 - 700	130	91	22	10.0	46.8	1	9831 4058 34	4230 1824 00	152	32	621	20
RATT															
QMX42-2RATT	50	6 - 20	4 - 14	1200	43	3.7	1.7	7.5	3/8	8432 5120 70	4230 1818 00	134	23	386	15
QMX42-5RATT	50	10 - 50	7 - 35	560	43	3.9	1.8	21.3	1/2	8432 5130 70	4230 1819 00	134	23	412	15
QMX50-9RATT	50	20 - 90	15 - 65	560	51	6.0	2.7	18.2	1/2	8432 5140 70	4230 1820 00	137	23	462	15
QMX50-15RATT	50	30 - 150	22 - 110	330	51	6.0	2.7	31.3	1/2	8432 5150 70	4230 1820 00	137	23	462	15
QMX62-19RATT	50	40 - 190	30 - 140	330	63	10.0	4.5	19.4	5/8	8432 5160 70	4230 1821 00	152	25	526	15
QMX62-19RATT	50	40 - 190	30 - 140	330	63	10.0	4.5	19.4	1/2	8432 5165 70	4230 1829 00	152	25	526	15
QMX62-32RATT	50	70 - 320	50 - 235	200	63	10.8	4.9	32.1	3/4	8432 5170 70	4230 1822 00	152	25	527	15
QMX80-58RATT	50	120 - 580	90 - 425	200	81	21.0	9.5	29.6	3/4	9831 4048 18	4230 1971 00	146	30	610	20
QMX90-95RATT	50	200 - 950	150 - 700	130	91	22.5	10.2	46.8	1	9831 4058 35	4230 1824 00	152	32	621	20

[a] The socket holder is included in the product.

Angle head tools
Atlas Copco special DC electric brushless resolver nutrunners with a right angle head. These simplify access to hard-to-reach applications, enabling nutrunners to be positioned in any way.



Model	Travel mm	Torque range Nm	Torque range ft lb	Max speed	Min C-C	Weight kg	Weight lb	Gear ratio	Socket holder size in	Ordering No.	Socket holder[a] Ordering No.	A mm	B mm	C mm	D mm	E mm
QMX42-7RTV	-	15 - 70	11 - 50	360	(40)	3.7	1.7	36.1	1/2	9831 4045 46	-					
QMX42-7RTV	50	15 - 70	11 - 50	360	(38)	5.3	2.4	36.1	1/2	9831 4045 32	4231 2797 00	-	-	-	-	-
QMX42-7RTV	24	15 - 70	11 - 50	360	(38)	5.1	2.3	36.1	1/2	9831 4045 64	4231 3207 00	-	-	-	-	-
QMX42-2RTV	-	6 - 30	4 - 22	1000	(36)	3.5	1.6	11.7	3/8	9831 4045 95	-	-	-	-	-	-
QMX50-14RTV	-	30 - 140	22 - 100	320	(51)	6.2	2.8	33.9	1/2	9831 4046 84	-	141	-	-	15	476
QMX50-20RTV	-	40 - 160	30 - 115	190	(51)	6.1	2.8	58	1/2	9831 4046 78	-	141	-	-	15	476
QMX62-34RTV	-	70 - 340	50 - 250	190	67	13.5	6.1	36.0	3/4	9831 4047 46	-	153	-	-	14	548.5
QMX62-34RTV	24	70 - 340	50 - 250	190	63	14.5	6.6	36.0	3/4	9831 4047 31	4231 2416 00	-	-	-	-	-
QMX62-60RTV	-	120 - 600	90 - 440	60	106	21	9.5	105	1	9831 4047 21	-	-	-	-	-	-
QMX62-60RATTV	50	120 - 600	90 - 440	60	106	23	10.4	105	1	9831 4047 50	4231 3018 00	-	-	-	-	-

[a] The socket holder is included in the product.

Angle nutrunner

Atlas Copco special DC electric brushless resolver nutrunners with a right angle head and spring travel. The right angle allows these tools to be positioned in hard-to-reach locations without placing undue strain on them.

Model	Travel mm	Torque range Nm	Torque range ft lb	Max speed	Min C-C	Weight kg	Weight lb	Gear ratio	Socket holder size in	Ordering No.	Socket holder[a] Ordering No.
QMX42-5RVT	76	10 - 50	7 - 35	560	43	5	2.3	21.3	3/4	9831 4045 56	4231 2473 00
QMX50-15RVT	50	30 - 145	22 - 105	300	55	9.4	4.3	31.3	1/2	9831 4046 85	4230 1819 00
QMX62-28RVT	50	50 - 280	35 - 205	190	82	16.4	7.4	32.1	3/4	9831 4047 36	4230 1822 00
QMX90-95RVT	50	200 - 950	150 - 700	130	108	30	13.6	46.8	3/4	9831 4058 17	4230 1824 00

[a] The socket holder is included in the product.

U-nutrunner

Atlas Copco special ”U” design DC electric brushless resolver nutrunners. Designed for locations with minimal nutrunner length clearances as in exhaust manifold or indexing applications.

Model	Travel mm	Torque range Nm	Torque range ft lb	Max speed	Min C-C	Weight kg	Weight lb	Gear ratio	Socket holder size in	Ordering No.	Socket holder[a] Ordering No.
QMX42-5RUT	50	20 - 50	15 - 35	560	43	5.5	2.5	21.3	1/2	9831 4045 45	4230 1819 00
QMX50-9RUT	76	15 - 80	110 - 55	560	51	8	3.6	18.2	1/2	9831 4046 31	4230 1820 00
QMX50-15RUT	76	30 - 140	22 - 100	330	51	8	3.6	31.3	1/2	9831 4046 26	4230 1820 00
QMX62-19RUT	50	30 - 170	22 - 125	330	88	15	33	19.4	3/4	9831 4047 37	4230 1822 00
QMX62-32RUT	50	55 - 280	40 - 205	200	88	18	8.2	32.1	3/4	9831 4047 35	4230 1822 00
QMX95-200RUT	12	350 -1750	260 - 1250	60	95	34	15.4	98	HEX	9831 4058 32	not available

[a] The socket holder is included in the product.

Co-axial nutrunner

Atlas Copco special co axial-design DC electric brushless resolver nutrunners. This design enables our tools to perform special gauging or fastening applications. Essentially, a nutrunner inside a nutrunner. The center nutrunner is used to set a position or torque while the outside nutrunner synchronizes and secures the position with a lock nut or monitors for excessive friction.

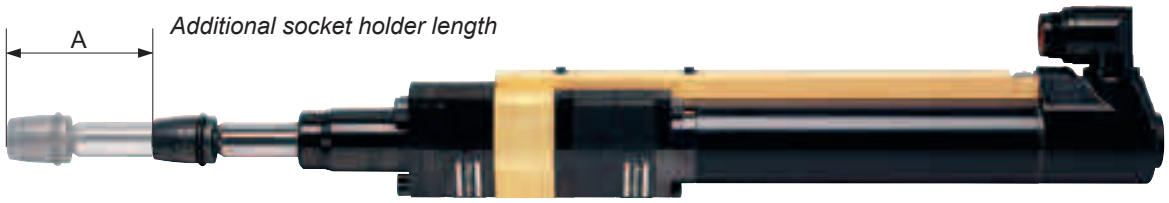
Model	Travel mm	Torque range Nm	Torque range ft lb	Max speed	Min C-C	Weight kg	Weight lb	Gear ratio	Socket holder[a] size in	Ordering No.
QMX42-2RT/QMX42-5ROT	24 / 24	15 / 63	110 / 45	270 / 170	44	10	22	16.00 / 41.23	1/4 / 3/4	9831 4045 62
QMX42-2RT/QMX42-5ROT	24 / 24	20 / 50	15 / 35	1200 / 560	44	10	22	7.5 / 21.33	1/4 / 3/4	9831 4045 83
QMX42-5RT/QMX50-15RT	24 / 24	50 / 50	35 / 110	200 / 350	64	15	33	21.33 / 31.24	3/8 / 3/4	9831 4046 35
QMX80-55RT/QMX80-10RT	36 / –	550 / 100	400 / 75	200 / 100	216	48	105	29.56 / 48.44	3/4 / –	9831 4040 65

[a] The socket holder is included in the product.

Cables Stand Alone

Model	Ordering No.
Cable between spindle and controller, 2 m	4231 5062 02
Cable between spindle and controller, 5 m	4231 5062 05
Cable between spindle and controller, 10 m	4231 5062 10
Cable between spindle and controller, 15 m	4231 5062 15
Cable between spindle and controller, 20 m	4231 5062 20
Cable between PBU and controller, 2 m	4231 5063 02
Cable between PBU and controller, 5 m	4231 5063 05
Cable between PBU and controller, 10 m	4231 5063 10

Atlas Copco special socket holder designs allow you to reach into applications or parts with tight clearances.



QMX42-2RT

A mm	Product No.	Socket holder size in	Socket holder[a] Ordering No.
0[b]	8432 5120 10	3/8	4230 1818 00
50	9831 4063 08	3/8	4231 0065 30
100	9831 4063 10	3/8	4231 0065 31
150	9831 4063 12	3/8	4231 0065 32
200	9831 4063 14	3/8	4231 0065 33
250	9831 4063 16	3/8	4231 0065 34
0	9831 4063 07	1/2	4230 1819 00
50	9831 4063 09	1/2	4231 0065 35
100	9831 4063 11	1/2	4231 0065 36
150	9831 4063 13	1/2	4231 0065 37
200	9831 4063 15	1/2	4231 0065 40
250	9831 4063 69	1/2	4231 0065 39

QMX42-5RT

A mm	Product No.	Socket holder size in	Socket holder[a] Ordering No.
0	9831 4063 17	3/8	4230 1818 00
50	9831 4063 18	3/8	4231 0065 30
100	9831 4063 20	3/8	4231 0065 31
150	9831 4063 22	3/8	4231 0065 32
200	9831 4063 24	3/8	4231 0065 33
250	9831 4063 26	3/8	4231 0065 34
0[b]	8432 5130 10	1/2	4230 1819 00
50	9831 4063 19	1/2	4231 0065 35
100	9831 4063 21	1/2	4231 0065 36
150	9831 4063 23	1/2	4231 0065 37
200	9831 4063 25	1/2	4231 0065 40
250	9831 4063 27	1/2	4231 0065 39

QMX50-9RT

A mm	Product No.	Socket holder size in	Socket holder[a] Ordering No.
0[b]	8432 5140 10	1/2	4230 1820 00
50	9831 4063 28	1/2	4231 0070 25
100	9831 4063 29	1/2	4231 0070 21
150	9831 4063 30	1/2	4231 0070 22
200	9831 4063 31	1/2	4231 0070 23
250	9831 4063 32	1/2	4231 0070 24

QMX50-15RT

A mm	Product No.	Socket holder size in	Socket holder[a] Ordering No.
0[b]	8432 5150 10	1/2	4230 1820 00
50	9831 4063 68	1/2	4231 0070 25
100	9831 4063 33	1/2	4231 0070 21
150	9831 4063 34	1/2	4231 0070 22
200	9831 4063 35	1/2	4231 0070 23
250	9831 4063 36	1/2	4231 0070 24

QMX62-19RT

A mm	Product No.	Socket holder size in	Socket holder[a] Ordering No.
0	8432 5165 10	1/2	4230 1829 00
50	9831 4063 37	1/2	4231 0075 11
100	9831 4063 40	1/2	4231 0075 12
150	9831 4063 43	1/2	4231 0075 13
200	9831 4063 46	1/2	4231 0075 14
250	9831 4063 49	1/2	4231 0075 15
0[b]	8432 5160 10	5/8	4230 1821 00
50	9831 4063 38	5/8	4231 0075 16
100	9831 4063 41	5/8	4231 0075 17
150	9831 4063 44	5/8	4231 0075 18
200	9831 4063 47	5/8	4231 0075 19
250	9831 4063 50	5/8	4231 0075 20
0	9831 4063 71	3/4	4230 1822 00
50	9831 4063 39	3/4	4231 0075 21
100	9831 4063 42	3/4	4231 0075 22
150	9831 4063 45	3/4	4231 0075 23
200	9831 4063 48	3/4	4231 0075 24
250	9831 4063 51	3/4	4231 0075 25

QMX62-32RT

A mm	Product No.	Socket holder size in	Socket holder[a] Ordering No.
0	9831 4049 37	1/2	4230 1829 00
50	9831 4063 52	1/2	4231 0075 11
100	9831 4063 55	1/2	4231 0075 12
150	9831 4063 58	1/2	4231 0075 13
200	9831 4063 61	1/2	4231 0075 14
250	9831 4063 64	1/2	4231 0075 15
0	9831 4063 72	5/8	4230 1821 00
50	9831 4063 53	5/8	4231 0075 16
100	9831 4063 56	5/8	4231 0075 17
150	9831 4063 59	5/8	4231 0075 18
200	9831 4063 62	5/8	4231 0075 19
250	9831 4063 65	5/8	4231 0075 20
0[b]	8432 5170 10	3/4	4230 1822 00
50	9831 4063 54	3/4	4231 0075 21
100	9831 4063 57	3/4	4231 0075 22
150	9831 4063 60	3/4	4231 0075 23
200	9831 4063 63	3/4	4231 0075 24
250	9831 4063 66	3/4	4231 0075 25

[a] The socket holder is included in the product.

[b] This socket holder follows when you order the standard nutrunner.

NOTE: 50 mm spindle travel for all sockets holders.

Power Box Unit – PBU

Power Box Units are used for power distribution. Standard hardware such as Ethernet switches, E-Stop circuitry, 24 VDC power supply, and basic hardware such as power contactors are all configured into the PBU.

- 400 VAC 3 phase and 24 VDC/5A or 24 VDC/10A power distribution to each controller.
- Central Ethernet switch for internal and external TC communication.
- From 1 to 10 nutrunners depending on PBU, and sizes from 400 mm wide.
- All PBUs match TC52 and TC54.

Power Box Unit

Stand Alone cable between TC – PBU

Length	Ordering No.
2 m	4231 5063 02
5 m	4231 5063 05
10 m	4231 5063 10

Power Box Unit – PBU

Model	Size HxDxW mm	DC supply	Ordering No.
Stand Alone PBU 1 Ch	300x155x400	24V / 5A	4240 0503 00
Stand Alone PBU 2 Ch	300x155x400	24V / 5A	4240 0504 00
Stand Alone PBU 5 Ch	300x155x600	24V / 5A	4240 0701 00
Stand Alone PBU 3+3 Ch	300x155x600	24V / 5A	4240 0700 00
Stand Alone PBU 10 Ch	300x155x800	24V / 10A	4240 0702 00

Software

WinTC for PowerMACS

WinTC is the user friendly interface that allows users to program, view or configure station functionality. It is a Windows-based program that can be installed on the station PC, on a back office PC connected via Ethernet or on a portable laptop.

The software offers full reporting of tightening results as well as read-at-a-glance graphics of actual customer parts.

Each user can be assigned a specific user name and password with an access level associated with read and write capabilities. It also includes set-up wizards, product training tutorials and tightening templates that guide you through programming tightening sequences.

- User friendly Windows programming interface.
- 10 levels of read and write security.
- Read-at-a-glance graphics with actual picture of customer part.
- Graphical system map of hardware and software.
- Configurable cycle data menu for station reporting of torque data.
- Real time SPC and TDA reporting of any parameter.
- Trace reporting on torque vs. angle, current and time.
- Event logging of security access, parameter changes, errors, faults, alarms and warnings.
- Create tightening programs ranging from the very simple to as complex as the application requires.
- Maintenance menus to verify hardware and software changes without machine intervention.
- Built-in user manual for quick access.

WinTC	Ordering No.
Single-user license	8092 1162 01
Five-user license	8092 1162 05
Ten-user license	8092 1162 10